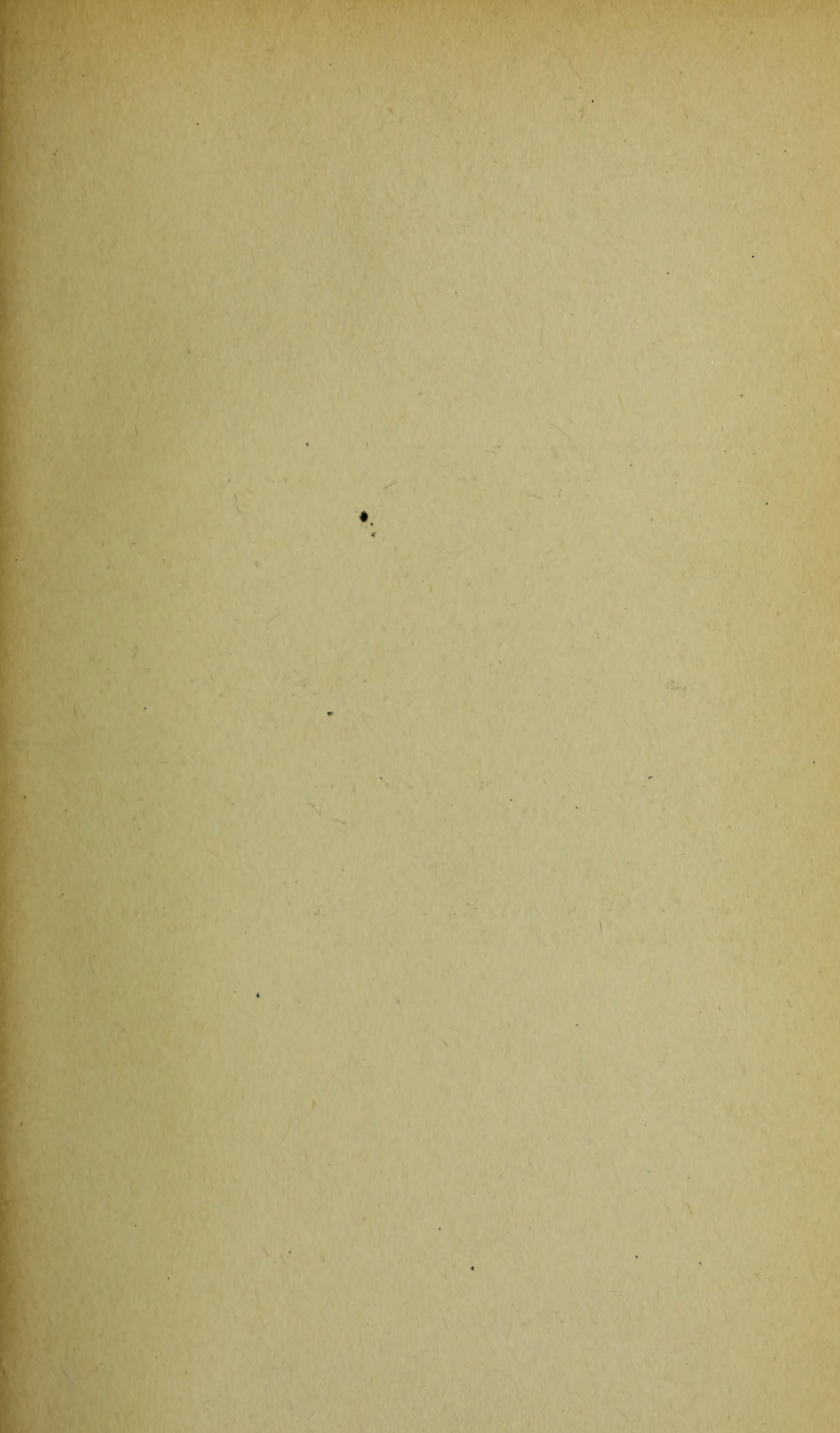






*BOSTON*  
*MEDICAL LIBRARY*  
*& THE FENWAY*



















14405

BOSTON MEDICAL  
APR 4 1916

# The Cleveland Medical Journal

Vol. XIV.

JANUARY, 1915

No. 1

## HIRSCHSPRUNG'S DISEASE, WITH REPORT OF A CASE\*

By WILLIAM E. LOWER, M. D., F. A. C. S., Cleveland, Ohio.

Although cases of this disease have been reported as early as 1825, still it was not until after Hirschsprung's report at the Berlin Congress for Children's Diseases, in 1886, that much attention was given to the subject. Finney (*Surg. Gynec. & Obst.*, 1908, vi, 624-643) has collected a bibliography of 206 articles up to January 1st, 1908. This condition has been noted under several names: Congenital idiopathic dilatation of the colon, Hirschsprung's disease, megacolon, megacolon congenitum, and giant colon, the first being probably the most common.

Some authors are of the opinion that the disease has its origin *in utero* in most cases. It is quite evident that the term congenital idiopathic dilatation of the colon is incorrect and will probably soon be replaced by a more accurate expression. Many cases reported in the literature are undoubtedly cases of intestinal stasis. If there is any trace of a mechanical obstruction it is not a true idiopathic dilatation.

Among the various hypotheses suggested to explain this condition those collected by Finney seem to be the most generally accepted. Barrington-Ward (*Brit. J. Surg.*, 1914, i, 345-360) in his review has classified them as follows:

### A, Mechanical:

1. An abnormally long mesentery, permitting torsion of the sigmoid (Barth).
2. Increased length of the intestine, especially the sigmoid, which throws the bowel into loops, and causes kinking and obstruction (Marfan, Neter).
3. Atresia of the rectum and anus (Treves).
4. Valve formation (Perthes, Roser).
5. Distention of pelvic colon, with meconium at birth, and valve action (Wilkie).

### B, Neuropathic:

1. Neuromuscular defect of a segment of the intestine (Hawkins).

\*Read before the Clinical and Pathological Section of the Cleveland Academy of Medicine, Dec. 4, 1914.



2. Paralysis of a segment of intestine (Pennato).
3. A lesion of the sympathetic (Bing).
4. Reflex spasm of the sphincters due to anal fissures (Fenwick).

*C, Inflammatory:*

Colitis becoming chronic.

*D, Congenital:*

1. Anomaly of development—dilatation and hypertrophy congenital (Hirschsprung).
2. Dilatation congenital, hypertrophy secondary (Mya, Concetti).
3. Hypertrophy congenital, dilatation secondary (Fenwick, Genersich).

One can readily see than no one of these theories could satisfactorily explain every case. It would seem that it probably is caused by some more or less complete obstruction, occurring early and causing overdistention and then paralysis of a segment of the colon.

It is more often noted in boys. Of 112 patients analyzed by Löwenstein, 87 occurred in the male and 25 in the female, a proportion of  $3\frac{1}{2}$  to 1. In adults the ratio between the sexes is different, being in the proportion of 2 to 1 in favor of the male (Finney, (*loc. cit.*)).

Of the 19 cases collected by Barrington-Ward (*loc. cit.*), ten were one year of age and under, and six between the ages of one year and five years. There are cases on record in which the patients were as old as 20 to 25 years, but the disease had always dated from birth or soon after.

### Symptoms

Of the symptoms, obstinate constipation and a distended abdomen are undoubtedly the most prominent. In a list of 24 cases of true congenital idiopathic dilatation of the colon, collected by Griffith (*Am. J. M. Sc.*, 1899, cxviii, 283-297), twenty-two showed one or both of these symptoms within three months and nearly always within a few days after birth. In nearly half of these cases constipation was the first symptom noticed, and abdominal distention developed soon after. In some there was no distention for a year, although the constipation had begun long before. The distention very often reaches unusual proportions, as in the case reported by Formad (*Univ. Med. Mag.*, 1892, iv,



625-633), in which the largest circumference of the part resected was 30 inches. As a rule the skin over the abdomen is tense and glossy, a decided contrast to the dry, sallow appearance of the skin on the face. The abdominal walls may be so thin, probably due to pressure atrophy of muscles, that one can watch the peristaltic waves of the intestine.

Sometimes there are long intervals between attacks and the patient may be kept fairly comfortable by the use of purgatives and enemata. Fecal vomiting and tumor are occasionally noted as prominent symptoms. Attacks of diarrhoea frequently alternate with the constipation and afford temporary relief. Among the general symptoms may be noted emaciation, auto-intoxication, and sometimes tetany. It may be of interest to note that children suffering with this disease are usually of low mentality, this probably being due to the continued absorption of toxins from the over distended intestine.

### Prognosis

Judging from statistics quoted by various writers, the prognosis seems to be very unfavorable. Terry (*J. Am. Med. Ass.*, 1911, lvii, 731) says. "I have been able to collect reports of 110 cases of megacolon treated surgically, with 82 recoveries and 28 deaths; i. e., 74 per cent and 26 per cent respectively. Excluding 15 cases in which nothing more than an exploratory laparotomy was done, we have 95 cases with 70 recoveries (73 per cent), and 25 deaths (27 per cent). The statistics of Löwenstein, made four years ago, showed a mortality of 48 per cent out of 44 cases subjected to operation. It would appear as though the death rate had either decreased rapidly within the past few years or else that proportionately more of the successful cases had been reported. The latest statistics regarding the medical treatment which I have been able to procure are those of Löwenstein in 1907, which show 59 patients treated, with 34 per cent recoveries and 66 per cent deaths."

"Duval gives a mortality of 74 per cent with medical and 34 per cent with surgical treatment" (Barrington-Ward).

According to Dubois (Abstract in *J. Am. Med. Ass.*, 1914, lxiii, 809), the mortality rate is much higher in those under five years of age, and in the cases on record operative treatment on 14 infants was followed by 100 per cent mortality; in 28 between 2 and 5, the mortality was 40 per cent; in 46 between 5 and 15, it was 26 per cent; in 41 between 15 and 50, it was 27 per cent, and in 14 patients over 50, it was 85 per cent.



The complications that so often set in, peritonitis, intestinal obstruction, bronchitis, bronchopneumonia, hydronephrosis, and heart and liver affections make the situation so serious.

### Treatment

This disease has been treated both medically and surgically. The various medical measures are those usually resorted to for chronic constipation, namely, regulation of diet, cathartics, enema, massage, electricity, and the rectal tube. These offer temporary relief and may be used as preliminary treatment until the patient is in condition to undergo an operation, for there is no doubt that the consensus of opinion favors surgical intervention. That the surgical treatment is not yet standardized is shown by the large number of methods recommended and practiced. No one clinic has had a sufficient number of cases to work out, as yet, what will probably be the best method. The methods of treatment used are:

1. *Intestinal Puncture.*

A method most unsurgical and certainly now no longer to be recommended.

2. *Intra-abdominal Massage of the Colon.*

Opening the abdomen and pressing out the contents of the bowel through the anus has been practiced in a number of cases, and according to Barrington-Ward might be used as a preliminary measure, but certainly could not be considered curative, inasmuch as it does not relieve the cause which produces it, and a recurrence must necessarily follow.

3. *Colotomy.*

To open the bowel and empty the contents through the opening and then do an immediate closure has also been practiced, with, of course, only temporary relief, and is no more to be recommended than the intra-abdominal massage, as it does not do away with the causative factor.

4. *Colostomy.*

Quoting from Finney's excellent article: "Colostomy has been performed, according to Ito and Soyesima, 23 times. As a preliminary to a more radical operation, this is a very valuable aid. It also gives opportunity to make a positive diagnosis. A few cases have recovered, with a permanent fistula."

Barrington-Ward says: "Colostomy has been a favourite mode of treatment, but young children stand colostomy badly,

and it is open to question whether death would not be preferable to an artificial anus acting throughout adolescence and adult life. Colostomy has been of use as a preliminary to other measures."

Harold J. Stiles (Terry, *loc. cit.*) has reported that he has employed colostomy with satisfactory results in certain cases, stating that it gives an opportunity for two-way douching of the colon. He further states, in discussion of Doctor Terry's article, "that the best thing to do is to open the abdomen and anchor very securely this enormous colon to the abdominal wall, and then open the bowel at once, or a day or two afterward, as the urgency of the case may require. My experience is that some of these patients get along perfectly well with the simple colostomy. In the case of a boy aged eight, colostomy was done five or six years ago; all the distention is gone and the boy is perfectly well. There is only a little leakage when the child's bowels are loose, and the only inconvenience is the passage of wind through the opening, which relieves the tension and prevents the obstruction.

"I have tried in a child of three the effect of doing a sigmoidectomy. Before the operation is done, care must be taken that the enormous sigmoid flexure and colon are thoroughly well emptied. If they cannot be emptied, preliminary sigmoidostomy should be made before the radical operation. In a little child the small intestine is no bigger than the finger, and the colon may be as large as the lower part of the thigh, and there is danger from the pressure of the large sac against the relatively thin small intestine.

"In elderly people, with a history of chronic constipation and intermittent obstruction for many years, here, again, the safest thing, I think, is preliminary colostomy. Then at the secondary operation I have done a resection of the sigmoid and as much of the large intestine as was necessary."

##### 5. *Colonplication.*

According to Critchlow (*Northwest Med.*, 1912, n. s. iv, 86) colonplication has been employed successfully in a few instances. Huntington, of San Francisco, and Freeman, of Denver, have secured a recovery by this method, but do not advocate it when the operation of choice can be done.

##### 6. *Colopexy.*

This method also has been tried by various surgeons, among them Treves and Richardson, but results have not been sufficiently satisfactory to recommend it.



### 7. *Entero-anastomosis.*

According to Finney, this method has given good results in most cases, and he reports his own case, in which he states that even with a persisting fecal fistula, it did not prevent the continued accumulation of feces in the distended loop.

Ito and Soyesima (quoted by Critchlow, *loc. cit.*) report a recovery in which they made a complete exclusion. Ito recommends this as an operation of choice. This, of course, gives an opportunity for a resection of the colon later in case that this method fails. The simple method of exclusion of the bowel by anastomosis seems to be a method which has received considerable recommendation.

### 8. *Resection.*

Critchlow believes that the operation of choice of most of the surgeons of this country is immediate resection of the affected portion, and an end-to-end or end-to-side anastomosis, and he quotes a successful case of W. J. Mayo, in which the colon was resected from the hepatic flexure to the rectum, and a lateral anastomosis made between the ascending colon and the rectum.

Terry (*loc. cit.*) claims "resection of the giant colon would seem to be the ideal operation. It is a more formidable procedure than any of the above-mentioned and should not be done as the primary operation in a fair proportion of the patients already much weakened by the effects of a megacolon. I believe, however, more primary resections will be done in the future, now that we have learned better how to prevent and combat shock."

Finney has described his method, which I will quote in detail:

"The technique employed in our case proved most satisfactory. It differs materially from the method usually employed, in that the preliminary colostomy is made in healthy bowel above the dilated segment. After this segment has been relieved of its impacted contents and recovered somewhat its normal size, the second operation, consisting of a lateral entero-anastomosis between the segments immediately above and below the distended portion, is performed. After a sufficient time has elapsed for the patient to recover entirely from the preceding operations, the third step in the procedure is taken. This consists in resection

of the whole of the affected portion of the colon, with closure of the free ends of the intestine. The advantages of this method over any other are, first, that the colostomy is made in healthy bowel at a point where it can remain undisturbed as long as desired; second, it is left as a safety valve until all the stages of the operation have been accomplished, when it is finally closed under cocain."

Critchlow thinks, however, that while this method has much to recommend it, it subjects the patient to too great a number of operations, but in bad subjects would probably be a good method.

Barrington-Ward recommends that the first operation should be a dividing of the ileum and planting it low down in the rectum. This operation often will give the patient relief for several months. If the child improves sufficiently, at a later period the large bowel above the anastomosis is excised, but in favorable cases it might be more satisfactory to complete the operation in one stage. He states that Sir Arbuthnot Lane has operated on five cases within the last year, four of which have made perfect recoveries, the fifth one dying from slipping of the ligature. The ages were 3, 6, 9, 10½ and 12 years respectively. They were all instances of the disease in an extreme form, and all had failed to react to medical treatment which had been employed over long periods.

The method I employed in the case which I desire to append herewith was a primary resection of the entire colon from the hepatic flexure to the lower part of the rectum. Unfortunately this case died, so I can not recommend it as being the best method of operation, but the operation was not especially difficult and the patient was not shocked as result of the operation, reacting very well and seemed to be in fairly good condition for several days. There was some vomiting, never any distention, and no evidence of peritonitis. The bowels moved without much difficulty on the second day. Just what the cause of death was in this case I am unable to determine, but there seemed to be some interference with the metabolism rather than a local causative factor.

The technique of the operation employed in this case was, ether inhalation, novocain locally. Incision through the left rectus. On opening the abdomen an enormously distended colon presented itself in the incision. The splenic flexure



had crowded the diaphragm well up so that the incision had to be somewhat elongated upward to bring the entire colon into the wound. There was a hard fecal concretion packed down into the lower part of the rectum, but dilatation did not occur until several inches above this large concretion. At the beginning of resection the contents of the bowel were squeezed in each direction and the bowel clamped across and then with the actual cautery the bowel was divided, clamps moved farther along and the hepatic flexure was invaginated into the lower end of the rectum. The contents of the bowels weighed 8 pounds. Cigarette drain was introduced at the lower end of the wound. Patient's pulse at the end of operation, 110.



Fig. 1  
Appearance of abdomen before operation.

History of the case: A boy, 11 years old. Father and mother living and well. One brother died of spinal meningitis,

one brother, 14 years old, living and well. Child had measles when 1 year old. Had suffered from severe constipation since birth. Abdomen was very much distended even as a small child. Mother states that ordinary cathartics and enemas had no effect and his bowels never moved unless given an injection of warm water with a little glycerine added at times. Child had good appetite, went to school every day, and was in the seventh grade. About once a month or every six weeks he would have acute complete obstruction with consequent difficulty in getting the colon emptied. Massage, electric treatments and all kinds of exercises were resorted to in order to produce a passage of flatus and thus afford relief. At the time I saw him the abdomen was very much distended, with all the symptoms of acute mechanical obstruction. All kinds of remedies had been tried without avail, and Doctor Sunkle, through whose courtesy the case came under my observation, had recommended an operation to relieve the present condition. The distention at this time was very great, as may be seen in the accompanying cuts.

As the distention seemed to be somewhat more on the left side than the right, and with the history of the case and general appearance of the abdomen, a diagnosis of Hirschsprung's disease was made before the operation and was readily confirmed after the abdomen had been opened.



Fig. 2a  
Specimen of gut before being  
emptied.

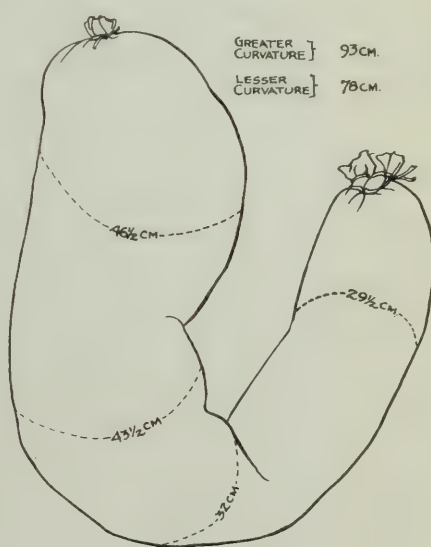


Fig. 2b  
Dimensions of specimen at different  
points.



Whether or not I should have done a colostomy or a short circuiting or some other form of operation, I have no way of knowing, for, as I stated in the early part of the paper, judging from the various methods of operation recommended, no person has had a sufficient number of cases to advise a method that is applicable in all cases.

A fuller report of the method of treatment and results obtained in all these cases should be made, so that we may have something more definite as a guide for treatment in the future. The cuts show the size of the gross specimen and also give the dimensions.

---

**Institutional Mortality of the New Born.**—L. Emmett Holt and E. M. Babbitt, New York, have studied the infant mortality during the early weeks of life. According to Holt's statistics, out of one hundred infant deaths occurring during the first year, 33 occur in the first month, 28 in the first two weeks, and 22 in the first week, and 13 on the first day. While this number of cases is small, they are of value on account of accurate diagnosis and more reliable than those obtained from general vital statistics. The questions they hoped to answer were how the general figures of the city compared with these and what is the average or normal mortality in 10,000 infants. How much of this mortality of the first two weeks can be prevented by the proper use of obstetrics and how much is due to malformations and avoidable accidents of birth? Ten thousand consecutive confinements in the Sloane Hospital for Women were analyzed. They were divided as follows: Abortions before the twenty-seventh week, 253; stillbirths, 429; born alive, 9,318. These 9,318 cases are analyzed with care and detail, and the causes of death during the first two weeks summed up. In analyzing stillbirths, the period of gestation was estimated by the length of the fetus. The paper is summarized as follows: "The deaths in the hospital during the first fourteen days were 3 per cent of the living births. For half this number, prematurity was responsible. Forty-eight per cent of the total deaths, and 66 per cent of those due to prematurity occurred on the first day. Congenital weakness and atelectasis, together made up 58 per cent of the total deaths. The mortality from conditions intimately connected with delivery—accidents of labor, hemorrhages, sepsis and asphyxia—together made up but 20 per cent of the deaths of the first fourteen days. Malformations and congenital diseases other than syphilis caused 4 per cent and syphilis 4 per cent. The only important disease developing after birth was pneumonia. Stillbirths must be reckoned as one of the large problems in infant mortality; they are one and a half times as many as the deaths from all causes during the first two weeks. Except for the larger role played by syphilis, the causes of stillbirths in no way differ from those which produce death during the first days of life. When we come to consider to what degree preventive measures might influence the mortality of the first two weeks of life, two things stand out prominently: The great number of deaths from congenital weakness can be reduced only by care of the mother during her pregnancy; the number of stillbirths and the deaths from causes connected with parturition can be largely reduced by good obstetrics.—*J. A. M. A.*



## THE TREATMENT OF PSYCHONEUROTIC PATIENTS\*

By TOM A. WILLIAMS, M. B. C. M. (Edin.), Washington, D. C., Corresponding Member Societies of Psychology and Neurology, Paris; Neurologist to Epiphany Dispensary.

### Definition and Means of Investigation

You will be anxious to know before I begin what I mean by psychoneurotic patients, because that is a term often vaguely conceived. But rather than define just what is meant by psychoneurosis, it is safer to try to show that we should study and treat psychoneurotics not by any routine physical or medical, but that we aim to classify them by etiology, rather than by mere description. Etiology means in this case emotional production of the set of symptoms which we call psychoneuroses. But this is only the first step, for the emotions themselves are always determined by perceptions and ideas the source of which must be sought. That search is called by some psycho-analysis. The word psycho-analysis in the minds of many people means that kind of psycho-analysis used by Doctor Freud of Vienna. I do not use that word in the restricted sense used by those who follow Freud. I use the word in its proper much wider significance.

The former way of approaching the classification of psychoneuroses was on the grounds of descriptive neurology as by differentiation into neurasthenia, hysteria, psychasthenia, hypochondriasis, et cetera. Unfortunately, these are defined differently by different students. As you, for instance, may know, Doctor Babinski defines hysteria as but that condition which is caused by suggestion, nothing more, nothing less, while Professor Déjérine will have none of that definition, his idea of hysteria being that the individual fails to be duly activated by his special environment and is thus disabled and incapable of performing his part in that particular environment.

Professor Freud, on the contrary, defines psychoneurosis in terms of their genesis, through various psychopathological disturbances, and Professor Janet on the basis of psychological in-

---

\*Address to the Cleveland Academy of Medicine at the opening of their 1914-15 Session, September 18th.

terpretations regarding a narrowing of consciousness. It is safe to approach this disorder on the premise that hysteria at least is an expression of disharmonious reactions.

It must be kept in mind that the same stimuli act on normally activated human beings in entirely different ways, according to their temperament, physical and psychological. For instance, as regards the physical factors, observe the reactions to a toxin like alcohol in their multifold variability, from depressed to exalted, from gloomy to joyful, and yet the pathogen is the same, only the subjects differ. Moreover, we find that there are numerous other toxic substances which will cause certain reactions entirely indistinguishable from alcohol reactions—except in their etiology. So that in toxic psychotic disturbances the important factor is not so essentially the cause of the reaction as it is the make-up of the individuals. So that when we attempt to definitely classify psychoneurosis we are on ground bristling with fallacy.

Hence my preference to lay aside entirely the question of defining psychoneurosis so as to study their genesis. The best way in which to study the genesis is to review some examples of psychoneurotic conditions, in which we shall be able to discover the etiology.

### Case 1

#### **Nervous Dyspepsia from Hysterical Phobias**

A woman, in consultation with Doctor Jackson, thirty-one years old, having three children, one aged six, and twins four and one-half years of age.

After the first child was three months old, she "was unable to do anything for six months, and has never been really well since." After the twins were born she was able to do some work. She prepared the food for the twins and gave four music lessons a week. The twins were frail. She has been, off and on, in bed for the last six months. A trip to California for two months bettered her spirits, but not her physique. Now she is really dissipated for the first time; the children are always on her mind.

The chief trouble has been the fatigue, but now she feels worried, she cannot concentrate and is obsessed by what she calls "problems." The chief of these has to do with her diet; it



arose thus: A gastro-enterologist stuffed her and her visits to his office exhausted her, and she felt scruples at not taking the diet, which made her uncomfortable. She lost weight one week while "stuffing" and the doctor said "starve" for a week.

Analysis of this situation showed very clearly that the woman had developed phobia of food, purely on the ground of her own scruples. When she consulted the gastro-enterologist he, in enlarging upon the facts in the case, illustrated a fact well known to neurologists, of the ease with which a detriment may be brought about by medical advice in its suggestiveness arousing an apprehensiveness concerning bodily functions such as to cause much distress and illness.

The patient had other symptoms, pains and extreme tension. The tension consisted of the contraction of all the muscles, especially those of the abdomen, which was interpreted as being due to the gastric symptoms. She said there was an actual cramp in the abdomen.

Without going into further detail, I merely state that this woman recovered and is quite well. This was accomplished quite simply through reasoning in regard to her diet, relaxation of the rigid muscles and other symptoms which caused the psychological harm. This case took a great deal more supervision than analysis.

## Case II.

### Attempted Suicide from Depression

This case was less simple and it was harder to detect the psychoneurotic situation.

A farmer's son, twenty-two years of age, after some weeks of moody behavior, threw himself into a creek. He was quickly rescued by his brother, who reproached him severely. This did not deter him, for a few weeks later he swallowed laudanum. This led to his removal to a sanitarium, where after a few weeks he crushed and swallowed an electric light globe. Later he gained access to a medicine cupboard and again swallowed laudanum. He was brought to Doctor A. B. Hooe in Washington by friends, who asked me to examine him.

Examination showed no physical disorder, but I discovered that there existed a psychological situation most serious, undiscovered and not even suspected by anyone else.

The boy was so ashamed of himself, although still determined to commit suicide, that it was hard to reveal the facts, from the analysis, where was found the very simple explanation of his distressing predicament.

To state the position briefly, upon this boy had devolved since the death of his father the management of his brother's farm. But a younger brother had succeeded in interfering a good deal with his plans, much to his mortification; and when also neighbors' meddling was acquiesced in by his mother, the situation became intolerable, as he had already failed in an attempt to work happily in another environment, which he tried for over a year. Suicide therefore seemed his only escape.

I began the examination by asking: "What is the matter with you?"

"Stomach trouble! If I could get well I would be all right."

"Have you any pain?"

"No. I complain because my bowels do not work."

"Why did you take laudanum?"

"I would be better off dead. People are always picking on me, and I have to get up early in order to do things I want to do."

He was then questioned about his school life, and I found that there was the main part of the difficulty in the first place. He had been very bashful—especially in the presence of young girls. He had very often tried to make advances, but had not the courage to do so. He had told his boy friends that licentious talk was wrong and was laughed at for his pains, which made him more bashful and taciturn than ever. He had learned the practice of masturbation, and then he was so ashamed of himself for fear he was loose-minded and injuring his health.

The failure of this boy to stand up for himself was due to his own shame at the onanism he had practised and his fear that he was injuring his health and mentality; so that he was not able to stand up against other boys, by whom he was much teased, in consequence of which he withdrew from social life, especially where girls were concerned, and became taciturn and irritable.

He confessed if he could be cured of the stomach pains, which he thought must have been caused by the masturbation and incurable, he would be willing to live and would like to go to work.

He was reassured and asked to think over the explanations



given him until the next day, meanwhile promising not to commit suicide until he had seen me again. Discussions were resumed the next day, and in less than a week the boy could be trusted alone, and in ten days he returned home in good spirits to go to work.

### Case III.

#### **Tic of Trunk and Diaphragm Removed by Psychomotor Exercises**

This case has already been published of a boy from North Carolina with barking, roaring and bowing tic. He had repeated contractions of the diaphragm and abdominal muscles, which caused him to bend forward with a barking, grunting noise. He had come to Washington to consult Doctor Thomas Charles Martin, who sent him to me.

These attacks had begun suddenly in North Carolina at 10 P. M., three months before. The significant fact was that he had eaten sandwiches which had been sent him by his parents in Washington, and that he had been thinking despondently before he went to sleep about how nice it would be to be in Washington. He was also thinking a great deal about his intestines having been under treatment by lavage. The exact psychologic mechanism was not discovered, however. The thing to be done was to get rid of the symptoms in this case.

This was done by showing the young man how to control the recti abdominis and diaphragm, and I made him perform a series of respiratory and recti movements, during which the tic of course could not be performed. This boy was very easily cured and without actually discovering the fundamental cause of the symptoms, which shows that a complete analysis is not always necessary.

### Case IV.

#### **Origin and Cure of a Chronic Fear**

A case where the symptoms were much less easy to get rid of was that of a lawyer twenty-eight years of age, who was sent to me on medical advice by his friends, all but one of whom had given up his case as hopeless. He gave up his work, had no appetite, could not sleep, would pace the floor at night for hours, and twice had taken steps towards suicide.

He had consulted several specialists without relief and had lost all hope of being cured. I shall not go into a lengthy discus-

sion of this case, as everyone has seen patients of this type and the case has already been published (1). I simply want to discuss the important factor.

The physical examination showed no abnormality except some loss of weight and exaggeration of reflexes from long-standing anxiety. In fact it was most satisfactory, but he was constantly in a state of fear. It was mainly in the presence of other people that his fear came over him. As a small boy he was noted for his bravery, and would fight against the boys of the neighborhood. The cause of his fear was unknown to him and he believed it to be hereditary, as one of his brothers was worse than himself, and had become a wanderer whose whereabouts would be unknown for months at a time. The patient had been fighting against this fear at least since his college days; he had tried playing football to make him courageous, but without effect; and so when he graduated, he plunged into a camp of rough lumber men and took his part as a laborer with the rest. Six months of this gave him still greater admiration for courage, but in no wise improved his own. He then returned to civilization and plunged into studies and office work, hoping to attenuate the fear which gripped him; but instead of this he gradually lost mastery, and after six years of struggle fell into the state in which he came to me.

The psychological examination was begun by stating that either he was, as he believed, a physical degenerate or there was some psychological cause for his fear; in which latter case the discovery of that cause might lead to the finding of a means of its removal and the ending of his fears. He was asked about the incidents of his early childhood, and finally the remembrance of a near relative was recalled and the key found to the situation. It seemed that this individual's ideal of bringing-up was the hardening process, and that the theory he held was that every boy's moral welfare required the knowledge of fear. These two objects were combined in such a procedure as throwing the lads into the water while they were unable to swim, and rescuing them only when they were going down breathless. In winter, a favorite method was to throw the boys while asleep in the morning into a bank of snow and chase them, whip in hand. The result of this was not hardening, but a breeding of a chronic fear in these two lads. The patient's recollection of these per-

---

1. 1914: *Ill. Med. Jour.*, Oct.; *Jour. Abn. Psychol.*, June; *N. Y. Med Jour.*, April.



formances reached back to the age of four. But he had completely put out of his mind these incidents and, indeed failed to take into consideration his cowardice as a young boy, believing it to have originated in the high school.

### The Mechanism of Psychogenetic Disorder

Before studying the importance of the bearing of analysis upon genesis, it is desirable to say a word about psychogenetic mechanisms. Fears of the kind cited, in the case of the farmer's boy with abdominal pain, or of the woman who could not eat, cause a set of reactions of hurtful kind. Why should they do so? The physiological explanation is fundamentally very simple, although in many cases it may seem most complex. But for our purpose the important fact is that these unfavorable results of environment can be "*conditioned*."

Prominent among the various causes of reactivity in higher mammals is the acquired reactivity stored in their memory, and most modified by environment; and we know that on the whole the modifications of those reactivities are directly conservative to the individual. But we ought not to forget that the opportunities for useful reactions are in some environments meager in comparison with the innumerable opportunities for deconservative reactions, as in criminals, perverts, spoilt children, the immoral and psychoneurotics. The mechanisms which lead to morbid conditioning such as these is well illustrated by the epochal experiment on dogs in which by repeated psychological stimuli the reflex of the gastro-flow may be inhibited. Now, the gastro-flow-reflex mechanism, autonomic and phylogenetic, one would imagine would be not very easily suppressed by psychological variation; but actually it is easily conditioned and reconditioned again to normal by very simple means. For example, if a dog about to eat is shown a whip, the gastric juice is inhibited at once—the whip being taken out of sight, the flow is no longer inhibited and the dog resumes his meal. On the other hand, the flow of gastric juice is easily induced by the mere ringing of a dinner bell, irrespective of any direct stimulus, such as the sight of food. That very simple physiological reaction illustrates the whole fundamental cause of the kind of reaction which we call psychoneurotic.

All psychoneurotic disorders are the results of conditioning of complex reactions other than in a conservative fashion.

### Therapeutics

Now, if that is the case, how are we going to get rid of these unhealthy conditioned reactions? We can get rid of them by reconditioning the responses of the patient. This is not so simple a matter as the case of the dog because the associational processes which caused the morbid reactions are much more complex in human beings than in animals. But they are easier in some respects to cope with, because we have access to human speech, the very symbol which we use to denote an idea.

In order to illustrate this point, let us go back to the cases quoted. The first case, of the woman with dyspepsia—how was she treated? First she was removed from home for two weeks—the reason for this being that her home was filled with associations which constantly conditioned morbid results. This was only one part of many other facts about the case not gone into, but which equally would have illustrated that everything in this woman's environment occasioned morbid recurrences of fear and scruples. She was taken away from all that and put into a place where her associations were remade in great part not by suggestion but by a gradual enlightenment as to their nature. This had to be approached most cautiously, as she had the idea, which it was advisable not to destroy too roughly, that she must take the diet very completely. Thirdly, there was her physical emaciation and general rundown condition. This made a difficult combination of symptoms, but on having her physical viewpoint entirely reconditioned, in a very few weeks she was returned home well to a happy life with her husband and children.

The boy who attempted suicide was treated as follows: It was first demonstrated to him so that he grasped it, that he had a mistaken idea fixed in his mind as to the effects of masturbation, for it would not cause dementia and had not done so. His shame and timidity were explained by the fact that he believed himself inferior in brain to the other boys because of the masturbation. He therefore had no confidence, and became so timid and fearful of being mocked that he would not speak above a whisper. He understood the first day and became convinced soon after. In this case the pain resulting from swallowing the glass disappeared spontaneously because it had been merely the familiar attempt to fix his thoughts on bodily symptoms in order to divert them from mental trouble—so common a procedure in neurotics. From the first he was allowed the maximum of freedom, while the greatest



tact was employed to make him feel that he was not being spied upon.

An important point in this case is that although the patient knew all the facts in the case, he through his own ignorance was unable to interpret them. As a consequence he was incapacitated in every way, which led him to attempt suicide. The fundamental points being explained, the symptoms disappeared spontaneously.

The case of the lawyer, which was much more difficult, had to be handled in a very different way. When the sources of the fear were discovered he declared: "I cannot see how this knowledge is going to benefit me because of the strong reaction which must have formed physical habits." I explained that new habits must be formed on the basis of the knowledge now gained, but that until sleep had been induced he would be in no condition for the reforming of habits. He objected that he had long since given up narcotics, as he was worse than before taking them, and was surprised that I never found it necessary to give narcotics, that I should induce sleep without them and that after this he would be less unwilling to eat.

Accordingly, treatment was begun by my visiting him in bed and hypnotising him into sleep. He slept eighteen hours, then carried out the dinner program we had previously arranged. Hypnosis was performed three times in all, but not on consecutive nights. In the meantime, re-education was begun. He was given many things to read, so as to keep firmly in mind the psychological nature of the situation.

He struggled with the situation bravely; but I left him alone after what proved too short a period, namely, four days, and he lost courage and began to relapse until a friend drew my attention to the situation after a week. We then resumed relations, as he felt the need of help. After four more days of re-education, the tide turned and he obtained control of his fear. He celebrated the occasion by an impressionist account of his feelings after being rid of the fear. This man called to see me just three weeks ago—he has had no further trouble.

Psychoanalysis is like any other kind of analysis of diseased conditions which call for medical procedure. When we say psycho-analysis, we do not necessarily mean that we are following the school of Freud or any particular method. Speaking personally, I have never found a case where an active morbid complex

was unconscious (by complex is meant simply a set of ideas and their accompanying emotions). Any set of thoughts may be associated together into a complex or constellation, and if the set of associated ideas is distressing and causes maladjustment to the surroundings, we call it a psychoneurosis, as the cases I relate illustrate. (See also *The Traumatic Neurosis*, *Am. Jour. Med. Sci.*, 1914, Oct. *Ten Cases of Hysteria in the Wash. Med. An.*, 1912, Jan.; *Post Grad.*, June, etc.

Those who have made a study of hysterical and neurotic patients know how often the patients will intentionally insist that some other factor than the real one is the source of the symptoms, for when the matter is a physical one, the doctor is provoked to a sympathetic attitude towards the situation. Another factor is this—that even though one is able to find that the source of the situation has been a circumstance of which the patient is perfectly conscious, as in the case of the lawyer, for instance, he will fail to see that that particular circumstance has caused the psychoneurosis. As I have tried to explain, any set of circumstances which caused an unnatural attitude towards life cause a psychoneurosis.

### Neurosis in Children

Many children grow up to be very timid and bashful. I am not talking of cases with physical disorders, but of those who are strong physically. The reason for this is that they are not taught to divert their energies into natural channels, so they are only cured of this timidity by reconditioning their general attitude toward life.

The following cases are examples of the distressing results of faulty upbringing:

A boy of fourteen was sent to me some years ago by Doctor G. Latimer, of Hyattsville, Md. He was not doing well in school, he would take hours to dress in the morning, and would go away and dream by the hour. This boy was seen four times, after which an analysis of the situation showed it was the result of reactions caused when the child was only three and one-half years of age. He had been the only child, much petted and loved; when he was two and a half a little brother was born, and he was jealous of the newcomer, who immediately became the petted and loved one of the family. He was reproached by his parents. In consequence he was made to feel hyperconscientious because of his bad behav-



ior, and forthwith developed little "manias," which led eventually to the more complex symptoms which had developed when I saw him. Instances of these are not uncommon even among persons judged normal—thus many people feel that the mere touching of wood or avoidance of the number thirteen wards off misfortune. People tend to do these things to be rid of an uneasy feeling. Whether or not these are interpreted in some definite way or not depends on the environment. This boy, for instance, felt that he was unreasonably jealous of his little brother, and that he must do something to compensate for it—to touch wood or to put on his clothes slowly or in a particular way, and had as a result built up this elaborate series of habits. He was cured in a few months. (See Juvenile Psychasthenia, *Am. Jour. Med. Sci.*)

Doctor Tynes, of Staunton, Va., sent me a child of eight who was subject to "fits" previously diagnosed epileptic, which consisted of sudden attacks of fright and the imperative desire to rush away. I soon discovered that this was due to his fear of wild animals, induced by the general timorousness inculcated by a foolish mother, who developed in him a timorous nature, which was the source of his impulse to run away. A simple explanatory talk and some psychomotor exercises showed the boy how to obtain control and after the interview he recovered from the consequences of his morbid fears.<sup>2</sup> This case illustrates the fact that even in children a realization of the situation is the important thing. It is only when a patient can intelligently interpret the symptoms of a psychogenetic disorder that he is in a position to cause them to disappear. The patient does not get well from the analysis, but because of the psychic procedure adopted therefrom.

But I cannot go into the philosophical and biological considerations pertaining to psychoanalysis in a short practical presentation like this.

### Evils of Suggestion

(See Common Errors in Neurological Diagnosis and Treatment—*Monthly Cyclo.*, 1914, June.)

Now a word about suggestion. I try so far as is possible to manage the patient without suggestion at all. I try to let him find out for himself what is the fundamental trouble, and then lead him to see the way in which he ought to go in order to get rid of the source of it and with it the symptoms. If, however, by an impos-

2. Hysteria in Children, *British Jour. Chil. Dis.*; Psychogenetic Dis. in Childhood, *Wash. Med. An.*, Jan.; *Post Grad.*, July.

ing manner or elaborate exposition of some procedure which he cannot understand a cure is suggested to him, then you are aiming or doing no better than any quack mental healer. In fact, such a procedure is inferior to New Thought or Christian Science, because these do something—in giving a philosophy, even though one is a dangerous negative. But you do nothing but remove the symptoms by exalting his suggestibility, leaving the patient more susceptible than before to like suggestions. To make the cure efficacious and permanent, one must use a procedure based on analysis followed by a definite plan of reconstruction of the reactions.

There was the case of a business man whose friends urged him to consult me because of his chronic state of depression. The following fall I saw him and asked him how he was, to which he replied that he was quite well. I asked if he had taken my advice—he said he had taken Christian Science. What this man actually had was arterial hypertension from too much food, too little exercise, and too much business worry. As a result of the optimism which he gained through Christian Science he went into very large financial deals, ruined his business and committed suicide in six months. Nothing material could hinder; everything must be all right—that is the creed, and there were its consequences. I don't mean to suggest that all suicides are due to Christian Science—but we do know that many suicides can be prevented by getting at the cause of the trouble instead of hiding ostrich-like in the sand of negation.

### Sanitaria

Regarding sending psychoneurotic patients to sanitariums. Some doctors send their patients immediately to neurologic sanitariums. Well, that is very good in its way. In a physical case you send a patient to a hospital because of a certain surgeon you know, who performs a certain operation you know about. You know a good deal about it, even if you cannot do it yourself. So, a neurologic patient should be sent to a physician for special treatment—not to a sanitarium, a mere institution as such. If you know what is going to be done for the patient at that sanitarium—well and good—but that is not always the case.

For instance, in London last summer, I saw a professional man of thirty at the St. Luke's Hospital for the Insane, regarded as demented. The patient had been certified as a hopeless lunatic, and had been incarcerated for some years, so that he was slowly



perishing of inanition. He had within four years consulted several distinguished neurologists, and although none made a diagnosis, all had regarded the case as hopeless. Although the man persistently refused food and could not be kept clean and his dejection was so profound that it required immeasurable finesse to obtain his confidence, twenty minutes served to find out that his condition was purely psychogenetic. It was merely the result of an intense depression caused through his failure to accomplish a most ambitious task in literary psychology, for which he was ill-fitted in training and intellect. An exaggerated slough of despond from discouragement would describe the mechanism in popular language. Through the persistent efforts of a faithful sister who had consulted me, proper measures were instituted in spite of the scepticism of others, and the new year brought me word that the patient had shaken off his melancholia and is well. Also in the case of the boy who tried to commit suicide four times—he left the sanitarium in worse condition than when he went, and was then readily cured as the result of a proper analysis.

We conclude, therefore, that the secret of the proper management of psychoneurotic patients is not in a sanitarium, not suggestion, not Faith, not hygienic or medical treatment, but rectification of the psychological reactions to which the preliminary step is an appreciation of the mechanism of the disorder, by an untangling of its elements. (See *Spurious and Genuine Treatment of Psychoneurosis*, *Ill. Med. Jour.*, Oct., 1914.)

1705 N Street, N. W., Washington, D. C.

---

**Department of Public Health.**—The Department of Public Health of the American Museum of Natural History is at present engaged in the preparation of a special exhibit of military hygiene and sanitation, dealing with the health of armies, the hygiene of the individual soldier and the general problems of camp sanitation. A number of new exhibits illustrative of insect-borne diseases were added to the department's display during 1914, the most important single exhibit being a model of the flea (carrier of bubonic plague) 1,728,000 times natural size, prepared by Mr. Ignaz Matusch. The history of the bubonic plague in the past is shown by reproductions of a number of early paintings and by a series of maps illustrating the geographic spread of disease during its historic epidemics. A series of photographs of four American army surgeons who discovered the mosquito transmission of yellow fever, has been hung near the entrance of the hall.

**GEOLOGICAL EVIDENCE OF MAN'S ANTIQUITY\***

By T. WINGATE TODD, from the Anatomical Laboratory, Western Reserve University, Cleveland, O.

"There is no antidote against the opium of time," wrote Sir Thomas Browne. "Twenty-seven names make up the first story before the flood, and the recorded names ever since contain not one living century. The number of the dead long exceedeth all that shall live. The night of time far surpasseth the day." Nevertheless, undeterred by such discouraging thoughts, Sir Thomas was also considering the antiquity of man.

The skeleton of man himself, his brain, his teeth, can give us internal evidence concerning the stage of his physical development, but as for the time at which he lived, the conditions and the climate in which he passed his days, his pleasures and his work—these we can learn only by external evidence, the evidence of the rocks around him, the animals and plants which flourished with him, and the implements and drawings which he made.

The title of this paper is therefore somewhat misleading; it must be amplified. To understand the antiquity of man we must consider geological, paleozoological and archeological data. To these should be added botanical evidence but for the necessity of a reasonable attempt at brevity. These subjects must not be considered separately, though for convenience they will be taken in order. When the geological record is in confusion and has failed to tell us of the successive advances and retreats of the ice, many times, as Osborn remarks, "the traces of plant and animal life serve both biology and meteorology like vast thermometers of the past, actually recording within a few degrees the repeated rise and fall of temperature. Man, first with his crude implements and then with his skeletal remains, enters amidst these extinct floras and faunas and affords a new and very precise means of marking off the stages of geologic time."

We pass at once to archeological evidence and over this we must not linger. Certain flint implements of the **Paleolithic Age** are found more or less abundantly, alone or in association with human or animal remains. Though some are rudely chipped, all have been worked with evident purpose. Some display greater skill than others, and hence six or eight stages of

---

\*The first paper in a symposium on Primitive Man, held at the Academy, December 11th, 1914.



culture have been described by French investigators, in whose land these implements display most distinctly the differentiation into groups.

In the Pliocene and the Miocene and possibly the Oligocene periods are other flints, eoliths by name, concerning the character of which there is no present agreement among the authorities of the day. To some they appear to be the very rudely chipped flint implements of an early human or prehuman ancestor. To others they are merely artefacts of nature's own production, which bear a chance resemblance to human manufacture. It has been said that eoliths occur only in places where flint pebbles are commonly present; not elsewhere. But this in itself would not negative human workmanship. Eoliths are indeed found in the same deposits with paleoliths. It is only in France that the distinct varieties of paleoliths can be clearly distinguished, and even there specimens belonging to different cultural stages are found together. It cannot be too strongly or too frequently insisted that evidence from any one source should not be taken alone, but only in conjunction with all other information available.

Eoliths have been found in the camps of the recently extinct Tasmanians. Lately they have been discovered also in the deposits from which the Heidelberg jaw was taken. The Eskimos of today represent largely the highest or Magdalenian stage of paleolithic culture. It was only the other week that I examined an implement similar to a typical Solutrean spear head. It was beautifully chipped from a piece of glass by an Australian aborigine of the present day.

The archeological evidence is then that man certainly existed in so remote a time as the early part of the Glacial period, and some prehuman ancestor who may have had rudimentary notions of how to chip flints, lived during earlier periods still (Pliocene, Miocene, Oligocene). I say prehuman advisedly. For it is difficult to believe that man should have remained practically a constant during all these vast and immeasurable ages while every other phylum of mammals has considerably altered.

A study of the changes undergone by the earth's crust during the Ice age gives one a better idea of the length of time than would the statement that the period lasted 1,000,000 years. Unfortunately for the study of the age, so many changes occurred during the Glacial period to obliterate the surface deposits

just previously laid down that the geology is frequently indeterminate in character. It is on such occasions that the fauna and flora assist one to decide the precise position in geological time. A comparatively early period, such as the carboniferous, forms a much easier subject for study, as in it the successive strata are laid down in order. On the other hand, a determination regarding Pleistocene deposits may be a most difficult matter. Opinion varies as to how frequently Europe was over-run by glacier formation. Switzerland and the Alpine region may have been covered four times, Germany perhaps only three, Scotland possibly six. For the purpose in hand and to avoid confusion resulting from the discussion of various opinions, let us take it at Professor Penck's estimate of four glaciations for Switzerland.

One naturally asks how long did the Glacial or Pleistocene period last, and by what geological deposits is the fact betrayed that it actually did exist? Human inhabitants of Europe during that time have left their skeletons and tools in river drifts, in cave earth, in breccia, and later, interred in various deposits characteristic of the period.

It stands self-evident that typical deposits of the Ice age are those obviously associated with frost and ice. Happily it is not difficult to demonstrate these conditions. The Screees at Wastwater in the English Lake District are an example now of what occurred in Gibraltar in the early Glacial period. In winter frost breaks off fragments of rock, crumbling the face of the cliffs. The broken pieces in the spring are carried downward by the force of the melting snow to form heaps around the shore of the lake. Early in the Ice age a similar frost action was characteristic of Gibraltar, and in this broken rubble a human skeleton became embedded. Gradually lime brought by the water flowing over the gravel sank in among the stones, forming a kind of mortar which united the loose material into natural concrete or breccia.

Now, leaving frost, let us turn to ice as a factor in the Pleistocene and consider certain phenomena characteristic of its action. One must not suppose that Europe of the Glacial period resembled Greenland of today. The ice sheet was not continuous, though it frequently extended from one watershed to another. The ice sheet covering Denmark and Scotland probably had a thickness of 2,500 feet. Over the site of Berlin it reached only some 1,300 feet in thickness. The modern snowline runs ap-



proximately parallel to that of the Glacial period, but at an average elevation of 1,200 metres above it. Evidence goes to show that the vast amount of glaciation was not due to increased precipitation, but to a lower rate of melting. In other words, the Alps above the snowline in the Pleistocene bore very much the appearance which they now have. To produce this lower rate of melting a fall in temperature of  $4^{\circ}$  to  $5^{\circ}$  C. would be sufficient. Thus we see by what a narrow margin we escape a Glacial period at the present day.

It is plain that the enormously thick sheet of ice in its movement would lead to marked erosion of the surface of the land. The 2,500 feet thick glacier which passed over the surface of southeastern Scotland came up against the immovable volcanic rock on which Edinburgh Castle stands and veered around it, gouging out the land at its foot to form the depression which early last century was a glacial lake, but which is now drained and used for the passage of the railroad. At the same time the glacier heaped up the debris, thus ground out of the surface, behind the rock to the south and formed the long slope on which the High Street leads up to the Castle gate, precisely as a stream dividing round a pebble silts up the sand behind it. This is known as *crag and tail* formation.

In a similar manner the bed of Loch Lomond was gouged out by the glacier of the southwest, and though this lake reaches the depth of 630 feet, its length is so great (176 times its depth) that the slope is very gentle, so gentle in fact that were the lake drained one would scarce notice the depression.

Much of the debris or *ground moraine* thus carried away by the glacier is ultimately shot down in front of the ice at the foot of the glacier to form a *terminal moraine*. This is carried away by the river which flows from under the glacier, or spread by the melting ice upon the country around about. Two hundred and eighty tons of mud in suspension are carried away daily by the river which flows from the Aar glacier. Not only is debris transported by glaciers in their lower strata, but it is also gathered on the surface from overhanging frost-riven rocks to form *lateral moraines*, and when two glaciers meet, a *medial moraine*.

It is, therefore, apparent that the glacier is a most potent eroding agent. By it the preglacial valley of the Lauterbrunnental has been excavated to a depth of 1,000 feet. When

one considers the slow movement of the glacier and the vast scars made by it upon the earth's surface, one may gain an idea of the length of time occupied by its work in the Pleistocene better than one can by arbitrary figures.

Breccia has been cited as an example of frost action. The most typical glacial formation is the boulder clay, a deposit in which no evidence exists of stratification as in river deposits, or of chemical action as in alluvial clay, but in which are scattered subangular stones and blocks of every shape and size, the direction of all of which is the same. It is indeed the bottom moraine of a glacier which has disappeared.

It must not be supposed, however, that the ice covered the whole land or destroyed entirely the animal and the vegetable life. The temperature of the Glacial period was only  $4^{\circ}$ - $5^{\circ}$  at the most, lower than it is now. Land and fresh-water molluscs associated with the northern mammals in Iceland and on the continent of Europe still exist, as a rule, in the same districts in which they are found fossil, and negative any great change in temperature.

Before we leave the geological evidence, mention must be made of the loess, a fine dust deposit characteristic of the interglacial phases, inasmuch as dust could not be distributed when the ground is covered with ice and snow. As the glaciers receded, vast tracts of barren desert appeared, devoid of vegetation, and subject to the action of the glacial foehn or wind that blows with dessicating force in the neighborhood of the ice fields. Such winds are constantly scouring up the dry and powdered surface of the moraines and distributing the dust over wide areas. The same action is seen today on steppes and plains like those of Colorado, where vegetation is not strong enough to hold the arid soil in place. Exceptionally the loess may be water-borne, but usually it is a wind deposit, and oftentimes has buried the skeletons of countless animals, which it first choked, as the sand storm of the Sahara today chokes and buries the doomed caravan. It is more characteristic of the last two interglacial phases than the first.

The last section of this paper should deal with the evidence of animal life on the antiquity of man and the climate in which he lived. With so great a wealth of material one can only give a fragmentary summary in the space at our disposal.



In the Pleistocene are found three groups of mammals, which indicate varying conditions of climate. Of these the first is the southern or temperate group. It includes such animals as the hippopotamus, southern and straight-tusked elephants, wolf and hyaenas, which last named animals destroyed vast quantities of the bones of their contemporaries in a manner distinctly annoying to the paleontologist. The tundra or snow-loving group includes the Arctic fox and the lemmings. The last or steppe group indicates a wide range of temperature and includes the reindeer, mammoth and woolly rhinoceros.

The various combinations of animals give us some clue to the climatic conditions of the time and, where the geological record is uncertain, assist in identifying the precise situation in the glacial period at which the confused deposit occurred. But nowadays one meets with the tiger from tropical India to frozen Siberia. It may yet be shown that this subdivision of animals into northern and southern groups is without solid foundation. In fact, it may be that we are on surer ground, so far as the later Pleistocene at any rate is concerned, by subdividing the animals into tundra, steppe and forest groups, of which the lemming, the jerboa and the squirrel, respectively, are typical representatives. In the following summary we have only time and space to pick out certain examples of the very considerable fauna which flourished in the Glacial times.

Early in the Pleistocene, as far as the first interglacial phase are found skeletons of the saber-toothed tiger and the hippopotamus, with the first appearance of the bison. The hippopotamus is indistinguishable from that of the present day. These animals indicate that the temperature then was somewhat warmer and perhaps more moist than it is at present. There was probably more sunshine than we get now. While the saber-toothed tiger became extinct before the second glaciation, the hippopotamus lived on into the second interglacial phase along with the last survivors of the southern elephant, and specimens of the straight-tusked elephant. During the third glaciation the mammoth, the so-called woolly rhinoceros, and the reindeer appear, all of which indicate a colder climate. They are found till the end of the fourth glaciation.

In the third interglacial phase the straight-tusked elephant again wandered into Europe, along with the broad-nosed rhinoceros and the cave bear.

During the fourth glaciation the reindeer and the bison exist with the mammoth and the woolly rhinoceros.

The evidence to be drawn from the animal life is that in spite of the fact that glaciers were abundant early in the Pleistocene, the temperature was higher than it is now, and the atmosphere was more moist, the conditions probably being similar to those which exist in Tierra del Fuego at the present day. The presence of glaciers does not infer any great degree of cold in the adjoining districts. Many years ago Saporta pointed out instances of regions with sub-tropical climate actually adjacent to glacial areas. As the Pleistocene period progressed, the average temperature fell slowly and became continental, with a warm summer and a cold winter, such as exists on the Russian steppes today, so that Europe in later Glacial times probably exhibited tundra or barren ground conditions, with the appearance during the last interglacial phase of the steppe and tundra fauna.

As for the length of time over which the Glacial epoch extended, only the vaguest guesses can be made. Before we end this brief account, it may be of interest to refer to various methods of estimating geological time. This can be done only by examination of rocks and deposits, animal remains affording merely punctuations, as it were, in the greater periods of time. As must be evident from the foregoing account, rates of deposition, erosion and the advance and recession of glaciers can be compared with similar occurrences at the present day. The latest method is that involving the estimation of the Helium content. Helium gradually accumulates in minerals and the amount produced in a given sample of rock in one year compared with the total amount present gives the basis for computation of the length of time during which the Helium has been accumulating, and hence the age of the rock.

Penck estimates the duration of the Glacial period at between 500,000 and 1,000,000 years, while since the climax of the last glaciation only some 30,000 to 50,000 years have elapsed. The beginning of the age of metals dates back about 3,500 years; the Neolithic lake dwellings 5,000 to 7,000; all the balance of 1,000,000 years are spent in the obscurity which we have essayed to penetrate. "Our fathers find their graves in our short memories, and sadly tell us how we may be buried in our survivors. Gravestones tell truth scarce forty years. Generations pass while some trees stand, and old families last not three oaks."



## GOITRE AS IT WAS KNOWN ONE HUNDRED YEARS AGO\*

By B. L. SPITZIG, A. B., M. D., Cleveland

It is still customary for persons of little learning to designate as goitre every swelling occurring in the anterior and lower region of the neck. Just as erroneous is the application of the term bronchocele by the older physicians, a word which by analogy can only cause confusion of cervical growths with tumors of the hypogastrium. As the character of goitre became more clearly defined, the error was recognized, but the customary misuse of bronchocele was not remedied. In this manner the firm, chronic goitres were termed struma, whilst bronchocele was taken to designate the soft and slowly progressing tumors (Wichman). The result was that the explanation of goitre made little progress and, indeed, seemed retarded by the English school (Mead, White and Cooper), who held struma to be identical with scrofula and adhered to the use of the term bronchocele for all goitres. In opposition, Haller, Fodere and others insisted upon struma as the generic term for goitre and held bronchocele to be a variety of tumor caused by the leakage of respiratory air into the thyroid gland.

According to etymology, broncho- or tracheocele indicates a rupture of the trachea and should be restricted to certain elastic tumors of the neck caused by the protrusion of mucous membrane between the supporting rings of the trachea (Girard). There is no authentic report of such rupture in the annals of pathology, and it seems very doubtful that this accident can occur through the causes mentioned, as coughing, sneezing and the playing of wind-instruments. Where external trauma and the violent separation of the cartilaginous rings are not in question, the possibility of tracheocele may be questioned, especially since the posterior wall of the trachea and the lungs below are much more yielding and would meet the shock of increased pressure as occurs in any violent respiratory exertion.

---

\*NOTE: The author has attempted a free and withal accurate rendition of the chapter on "Goitre" in an old German encyclopedia, "The Great Conversational Lexicon for the Cultured," published by Meyer in 1851. The entire work is included with the expressed hope that the reader may find the comparative study of ideas current in the first half of the nineteenth century as instructive as it proved to the reviewer. If it obtains for the old masters a just recognition of their able work, the author will feel amply repaid for his efforts in offering this translation.

*Pathology:*

In general, goitre may be defined as a slowly progressive enlargement of the thyroid gland, sometimes associated with pain or other symptoms and mostly irregular in outline; although firmly supported with wide base, it is freely movable and appears soft and elastic in consistency. The growth may affect part of the gland, either the isthmus or either of the lobes, and again the entire organ may be involved, usually with ill-defined outline of the thyroid boundaries. Slight enlargement is of little moment and may persist for a variable period, indeed for years; at stated times it decreases and again enlarges, not infrequently disappearing with the same spontaneity with which it arose. At times the tumor grows to an alarming degree, with consequent impairment of the glandular structure, and grossly protrudes from the lower cervical region. In certain cases the chin is elevated or remains hidden in an extensive mass reaching almost to the scapulae and down over the sternum in front. Occasionally the tumor extends behind the sternum and encroaches upon the mediastinal space.

As long as the goitre is of moderate size the effects are of little significance; but with progressive enlargement there arise numerous manifestations from the ever-increasing pressure on air- and food-passages, and on the cervical nerves and vessels. Dyspnea, stridor, hoarseness, dysphagia, dizziness and lethargy constitute the symptomatology. Where a retrosternal goitre further embarrasses respiration and causes cephalic stasis, there is the gravest danger of apoplexy and suffocation. Fortunately, mediastinal invasion is relatively infrequent and this holds true also for long-standing goitres that descend beyond the limits of the chest and encroach upon the abdomen. Perhaps the majority of tumors, on attaining fullest growth, never extend beyond the outer limits of the neck and exert little pressure on trachea and esophagus. The disturbances from thyroid stasis are slight, since the venous congestion is gradually lessened through the effects of collateral circulation and the more extended position of the head.

The enlarging thyroid inducing these mechanical conditions suffers a reaction itself; its own parenchymal integrity is destroyed by the obstruction of circulation and respiration. The increased vascularity is a potent stimulus of hyperplasia of the gland and the excitation of other phenomena. The structure becomes tender and more resistant with more or less nodulation;



the overlying skin assumes a cyanotic hue and is traversed by numerous varicose veins. In chronic strumous thyroids histologic examination rarely shows the picture of essential hypertrophy; usually there is an added quantity of gelatinous material, for the most part enclosed in distended, saccular spaces, the walls of which appear thickened. This is termed *struma aquosa*, *lymphatica* or *cystica*. At other times the thyroid presents a more morbid alteration in the invasion of heterogeneous tissue, flesh-like, nodular and more osseous in character. This type receives the name of *struma cirrhosa*, *steatomatosa*, *sarcomatosa*, *fungosa* or *cartilaginea*.

As a result of trauma incurred by a strumous gland, as blows, pressure, massage or violent counter-irritation, there may be an inflammatory reaction of varying intensity. Under favorable conditions a plastic exudate of lymph induces adhesion to neighboring structures; but under less favorable auspices the gland suppurates with ulceration and fistula-formation, resulting oftentimes in death. Gooch mentions ulceration into the anterior part of the trachea.

It seems improbable that true tracheocele (*struma ventosa*) occurs, although cases have been reported by Haller, Fodere and Bordeu. The question arises whether a communication between trachea and thyroid has ever been demonstrated. l'Alouett's discovery of an aerated goitre at post-mortem seems inconclusive, as no opening could be found, and the probability is that the air developed from the goitrous contents after death.

#### *Varieties:*

In practice goitre is best divided into benign and malignant forms. The benign varieties are (1) pure hyperplastic; (2) lymphatic, and (3) vascular (aneurismal or varicose). The last type shows a marked distention of the vessels in the thyroid substance, with little change in the parenchyma of the gland. It differs from lymphatic goitre in its greater resistance, increase of heat and pulsation. Glandular throbbing is often subjective and the same phenomenon of heightened pulse is often objectively found in the vessels of the face. The development is more acute in vascular than in lymphatic goitre; similarly the onset of dyspnea, dysphagia, vertigo and epistaxis is earlier in the case of vascular goitre.

The malignant group comprises the scirrhotic forms. This tumor presents less enlargement and is harder and more nodular;

boring, lancinating pains are the usual accompaniment. As the morbid state progresses the palpable nodes soften and ulcerate with the cancerous extension. The scirrhotic struma rapidly invades the trachea and surrounding muscles and the interstices distend with a sanguineous fluid. The overlying skin appears wrinkled and metastasis to the cervical glands is a frequent sequel.

With this knowledge of goitre the differential diagnosis from other cervical lesions is simplified. Thyreoiditis, inaptly called struma inflammatoria, is an acute process showing the cardinal symptoms of inflammation, pain, swelling, increased heat, redness, headache and other constitutional symptoms. Rupture of the trachea with struma emphysematica, more correctly termed emphysema colli, is characterized by a globular, elastic tumor which yields to pressure; this tends to diffuse and with every respiration, especially on deep expiration, grows larger with an audible inrush of air. Errors in diagnosis are more common in the presence of large lipomas or cystic tumors developing adjacent to the thyroid area and in hydrocele colli (Maunoirs), which consist of a cystic growth in the skin. A careful examination will always prevent an error in cases of cervical adenitis, carotid aneurism, et cetera.

### *Etiology:*

The direct cause of lymphatic goitre lies in the derangement of thyroid nutrition, a process more or less directly dependent upon the state of increased vascularity. The contributing factors are not clearly understood. Fodere, Chelius, Barbieri and Mondini recognized the congenital occurrence of goitre; Andere noticed its hereditary tendency. Predisposition to the disease is seen in the lymphatic state and in the anlage to scrofula; it occurs more frequently in children and in the female sex at the approach of puberty. The enumeration of indirect causes offers occasion to mention the distinction of goitre into sporadic and endemic forms. Generally speaking, the disease is occasioned by states causing active and passive thyroid hyperemia. Thus goitre often follows cardio-vascular disease (Frank). Primary causes are found in severe bodily exertions, as dystocia, emesis, coughing, shrieking, and extreme extension of the head. The endemic form occurs chiefly in high mountainous districts with deep valleys, in Southern Germany, Switzerland, Italy, France and Spain. In Northern Germany, Scotland, Norway and Sweden,



where similar conditions prevail, goitre is more inclined to be sporadic. It seems evident therefore that the cause of goitre cannot be ascribed solely to the influence of mountains and the use of melted snow and untreated, hard drinking water. In quest of other causes it has been suggested (Fodere, Saussure) that the solution lay in the warm, humid atmosphere, so commonly experienced in low-lying valleys where evaporation is excessive through solar action; and the constant inhalation of this surcharged air induces a state of thyroid depression, and also certain obstruction to the outflow of the glandular secretion through an hypothetical thyreo-tracheal duct. As Iphofen states, goitre is endemic in districts, first in which the air is vitiated, as occurs in confined, swampy lowlands, surrounded by dense woods; air that is moist and stifling, electrically deficient, but charged with strange effluvia; and, secondly, in which the water is low in carbonate content. In these regions the inhabitants are meagerly fed, poorly nourished and subjected to the hardest toil; and this explains the frequent association of goitre with scrofula and cretinism. According to Baumgarten, these causes contributed to the general affection of the villagers at Lerbach in the Harz mountains. In a certain locality, no different in physical character from other parts of the province Kemaon in India, M'Celland found a similar distribution of endemic goitre and referred this to the use of drinking water rich in lime-salts. Hanke, too, incriminates the calcareous water-supply in the recent endemic occurring at the fortress of Silberberg in Prussia. At the latter place it was learned that the best preventative of goitre is the precipitation of lime-salts by heat and their filtration from the water-supply.

The characteristic feature of vascular goitre is the varicosity in the substance of the gland. This is occasioned by the structural weakness of the blood-vessels, which renders them incompetent to offer the necessary resistance to the influx of blood or by a sudden inrush of blood-mass into the thyroid with some interference with its outflow. The precipitating cause of vascular goitre is trauma from external injuries of the neck. Other causes are the injurious agents, mentioned under the causes of lymphatic goitre, which induce a passive congestion of the gland. In this type of goitre there are variable hemorrhagic foci, which are to be distinguished from the extensive hemorrhage and rapid

enlargement of the thyroid, occurring in struma sanguinea. Struma scirrhusa is considered in the article on cancer (in the same encyclopedia).

### *Prognosis:*

It is self-evident that the prognosis of goitre depends upon the type, chronicity and extent of the lesion. In regard to type, the lymphatic is less serious than the vascular; and the scirrhotic form is incurable. The longer the duration and the greater the influence of endemic causes, the less is the expectation of improvement. Large tumors interfere more with neighboring structures and invite more serious complications. The slight lymphatic hypertrophy occurring at puberty is easily corrected under favorable circumstances. Adolescence has some bearing upon the short duration of the disease and treatment at that time is more successful than after maturity. The lymphatic system is more active in youth and aids the efforts of medication. After puberty is established and pregnancy terminated, goitres subside frequently without treatment.

### *Treatment:*

As the prognosis varies according to circumstances, so the treatment of goitre is largely individual; all measures, however, intended to restore the normal condition of the gland, have for their ultimate aim the reduction of thyroid enlargement.

*Lymphatic Goitre.* In order to treat sporadic and endemic goitre successfully, the causative factors must be recognized and should be remedied as far as possible. In sporadic cases the attempt is made to eliminate every circumstance that is known to lead to congestion of the thyroid. Similarly in endemic goitre hyperemia is prevented and in addition all other contributory influences are removed and, if this is impracticable, are rendered less harmful. Accordingly the individual living in a goitrous district is urged to leave that locality. If a change of residence is not possible, general hygienic measures are prescribed to minimize the danger of living in that region. Houses should be dry, well-lighted and free from crowding; nourishing and easily digested food is ordered; water deficient in carbonates must be avoided and calcareous water boiled before using; prepared carbonated waters are highly recommended.

Among the numerous remedies recommended for lymphatic goitre the most efficient is sea-sponge, and was held to be specific



until iodine, its active ingredient, was discovered by Fife and introduced into therapy by Coindet. Charred sponge, from twenty to thirty grains twice daily, is exhibited in powder, pill, electuary or decoction and, to prevent gastric irritation, is always combined with aromatic powders and waters. Its continued use may work injury to the general organism, as happens readily in the administration of iodine. The latter is used in the form of potassium iodide or tincture (18 gr. to one ounce of alcohol), of which from ten to twenty drops are administered in sweetened water two to three times daily. After from ten to fourteen days the effects of the medication are noticed in the wrinkling of the skin of the neck and later in the clearer demarcation of the thyroid lobes, which grow softer and are gradually resolved. Small goitres of moderate duration are thus relieved within from eight to twelve weeks; large tumors are lessened, and only chronic, firm and nodular glands remain uninfluenced by this treatment. If the subject complains of various uncomfortable sensations and the pulse is accelerated, the drug is discontinued for from eight to ten days and resumed only after the disappearance of the secondary symptoms. Iodine is known to activate all secretory organs and to stimulate the circulatory and nervous systems; but its chief activity is increased vascular resorption in the enlarged glandular organs. Excessive doses or prolonged use of the drug lead to impairment of appetite, which at first is increased, to indigestion, vomiting, diarrhea, dry cough, hemorrhage from the lungs and uterus, loss in weight, muscular tremor and edema. Not only is the thyroid affected, but the ovaries and testicles become atrophic. Frequently the mammae shrivel with great rapidity and consequently iodine has fallen into great disrepute with the sex. Many would retain their goitres in preference, unless their physicians promise to withhold the internal use of iodine. The contra-indications to the drug are an exceedingly nervous temperament, tendency to pulmonary disease, pregnancy, et cetera. Under these circumstances recourse must be had to the earlier remedies recommended for goitre: Carbonates and borate salts, barium, antimony, cicuta, digitalis, belladonna, et cetera; but at intervals they must be seconded by the use of sponge. These remedies are supplemented by appropriate measures directed towards increasing the circulation of lymph: Local rubbing with flannel; counter-irritation with ammonia, ox-gall, mercury and cantharides; plasters of ammonia, cicuta and digi-

talis combined with irritating ethereal substances. Hedenus highly recommends the ointment: Caustic soap, half-ounce; ox-gall, half-ounce; oil of wintergreen, twelve drops; althaea ointment, two ounces. The most efficient salve is made from potassium or sodium hydrate (one dram in an ounce of lard), of which a piece about the size of a pea is used two or three times daily. This may cause considerable smarting in a tender skin, and after the irritation has subsided, the salve is resumed in smaller quantity. Small goitres frequently disappear after the use of iodine and iodid ointments. At puberty drastic purgatives may suffice, together with flannel-rubbing or the application of a woollen band. Experience shows that the lunar phase exerts some effect upon goitre and better results may be expected from medicinal treatment during the wane of the moon.

No results follow internal and external treatment in old goitres that are exceedingly hard and nodular; nor need any benefit be hoped for in prolonged cystic conditions. Should these tumors endanger life on account of their mass, the only alternative is surgery, decreasing the growth by intentional suppuration or performing partial or total extirpation. Suppuration is induced by the use of caustics, scarification, paracentesis or the seton. The hair-file is introduced vertically according to Chelius and Fodere, or as Klein recommends transversely through the tumor. In this operation and in scarification the anatomy of the parts must be known in order not to invite disaster by puncturing the thyroid or carotid arteries. After cauterization and scarification the wounds are irritated to hasten the process of suppuration. If the onset of the latter is delayed the wound is filled with caustic salves or treated with hellebore-root. Paracentesis is indicated in cystic goitres in which distinct fluctuation can be elicited. After puncturing with lancet or trochar the cavity is treated with irritants in order to induce apposition of the walls of the sac. If the latter seems more purulent and the walls appear thickened, it is advisable to split and excise part of the sac, thereby insuring healing by granulation. The intentional suppuration induced by the methods explained before is maintained until its purpose is fulfilled, with the understanding, however, that the extension into the neighboring connective tissues must be carefully guarded. The use of the seton is not as dangerous a procedure as many claim and under favorable circumstances may be repeated, one case being recorded of six-



teen repetitions. At the end of suppuration the wound heals and the goitre retrogresses, often disappearing entirely after a variable period. The skin remains wrinkled but eventually assumes a normal contour. Extirpation of the gland will be considered later.

*Vascular Goitre.* Treatment has for its object the relief of the thyroid blood-mass and the restoration of vascular tone. The first purpose is served by absolute rest, by the use of a non-irritating diet, low in food-value, by the administration of digitalis and by judicious venesection. Both purposes are gained through the continued local application of cold packs. Treatment is solely palliative and recovery is possible only when the disease is treated at an early stage. A fully developed, vascular goitre offers little improvement. If life is jeopardized, the only alternative is the closure of the thyroid blood-supply. Lange, Jonas and Spangenberg first proposed ligation of the superior thyroid arteries and von Walther and Elizard attempted the operation. Favorable results are reported by von Walther, Coates, Wedemeyer, Jameson and Earle, whereas the cases of Fritze, Zang and Langenbeck proved fatal through sepsis and hemorrhage. The satisfaction of Chelius and von Gräfe was short-lived, as the thyroid returned to its former state. For ligation the larger side is chosen and, if this proves of no avail, the opposite artery is similarly treated. Even with bilateral ligation the tumor may persist and then the closure of the inferior vessels is demanded, as was practiced first by Riecke, Velpeau and Dietrich. Little difficulty is encountered in the superior operation, since the artery is elevated by the upper border of the thyroid and its pulsation is quite apparent.

The patient is placed in the sitting or lying posture with the head extended and slightly turned to one side. Von Walther starts the incision some distance below the submaxillary fold of the neck and extends it for three inches along the inner border of the sterno-mastoid, divides the latissimus colli and exposes the upper portion of the omo-hyoid muscle. The artery lies between the inner border of the sterno-mastoid and the upper and outer edge of the omo-hyoid. The adjacent connective tissue is separated by blunt dissection and the exposed artery elevated with a bent probe. By means of a Deschamp ligating needle a ligature is passed around the vessel and tied after the withdrawal of the needle. The artery must always be isolated so as not to

injure the laryngeal nerve and the superior thyroidal vein. The point of election is at the branching of the superior laryngeal artery (Frorieps). The after-treatment is absolute rest, antiseptic poultices and the use of hyoscyamus for coughing.

Far more difficult, however, is inferior ligation on account of the deep position of the inferior thyroid artery. Velpeau's incision is started at the clavicle and extended for two inches along the inner border of the sterno-mastoid. The platysma-myoides is divided and the common carotid exposed. The artery is situated close to the omo-hyoid between the trachea and the carotid artery. Dietrich makes a similar incision, but detaches the sterno-mastoid from the clavicle. On elevating the latter muscle the artery is found in the areolar tissue, surrounded by the large vessels and nerve-trunks. It is easily traced by following the transverse scapular artery upward and inward, as both arteries usually arise together from the subclavian.

The operation of ligation is not feasible in goitres that are grossly adherent, nor is it indicated in lymphatic goitre, which usually does not require the closure of the vascular supply.

*Scirrhus Goitre.* This tumor is irremediable and attempts made to reduce it only aggravate the condition. The use of irritants induces carcinomatous changes and hastens the fatal outcome. Early extirpation is the only means of benefit, provided that the disease is localized and has not advanced to general cachexia.

Glandular extirpation is practiced in lymphatic goitres, which are not adapted to other methods of reduction, and in scirrhotic forms, when operation is justified as explained before. It is presupposed that the gland is movable and not adherent to surrounding structures. Wichman considers the operation hardly less serious than decapitation, and Bell, Chelius and Dupuytren would have it omitted from surgical practice. The identity of the first surgeon who undertook extirpation is uncertain. During the last six decades, as far as it is known, it was practiced in twenty-nine cases and eleven of these proved fatal. The danger lies in the proximity of the great vessels and nerves, but especially in the severing of numerous vessels coursing through the thyroid. Every incision is followed by profuse hemorrhage and it is not surprising that death occurs so frequently during operation (Gooch, Kaltschmidt, Klein), or in other instances during the first thirty-six hours. Nor is it strange that Mandt reports the



necessity of thirty-five ligatures, Hedenus forty-four and von Gräfe fifty during a single extirpation. Moreover, an inflammatory reaction may arise in the obstructed veins and arteries extending eventually to the heart or brain (Roux, Dupuytren, von Gräfe). An added fatality occurs in direct septic extension to the trachea and the secondary inflammation of the lungs.

From the preceding the seriousness of the operation may be appreciated and only in extreme necessity should it be undertaken. In virtue of the grave danger incurred, provision should be made for capable assistance before proceeding to the work at hand. The patient is placed with abdomen slightly raised and head extended. The goitre is exposed through a vertical incision of sufficient length, a cross-incision (Dupuytren, Langenbeck), a large semilunar or an H-shaped incision (Hedenus, Roux). The second mentioned offers the most space but in large goitres the semilunar incision is to be preferred, as part of the upper flap is removed with the goitre, which obviates the necessity of dissecting the skin from the bleeding gland. The sterno-hyoid and sterno-thyroid muscles are divided at their respective points of insertion and are removed with the gland. This practice is generally recommended, as cutting the body of the muscle causes greater hemorrhage. The removal of these muscles has no deleterious influence upon the external mechanism of the larynx. The sterno-mastoid is divided near the sternum if it interferes with the exposure of the goitre. The extirpation proper is effected partly by knife and partly by blunt dissection. The various blood-vessels are cut before proceeding with removal of the gland. Large vessels require two ligatures before division is attempted. The greatest care should be exercised in freeing the gland from trachea and esophagus, as misdirected force induces dangerous reflexes, as coughing and choking (Mandt, von Gräfe). The enucleation must be complete, since the methods recommended for treating the stump are fraught with the greatest danger. The application of caustics and ligation of the pedicle (Theden) are prone to inflame the trachea and interfere with the healing of the wound.

In concluding the operation all blood-clots are removed and the sutures arranged; the edges of the wound are approximated and held in place with adhesive strips. Sedatives are given to insure rest, and nitre, antimony tartrate and calomel to ward off septic fever. If the pulse is small and a state of weakness is

evident, the common use of blood-letting is not to be recommended. The wound is treated with cold applications. If tracheitis intervenes, appropriate treatment is commenced to increase the patient's resistance. By changing the posture and lightening the dressings drainage can be encouraged and sepsis controlled. Timely incisions prevent the extension of pus into the tissues. The symptoms following the section of extra-laryngeal muscles and nerves, hoarseness, moderate dyspnea and dysphagia disappear spontaneously after the lapse of time.

There remains for consideration a modification of the preceding operation, namely, ligation. This is performed upon small, centrally situated goitres with elongated base, but possesses no superiority over the method of extirpation. In reality it has the disadvantage of inducing cellulitis around the thyroid stump. Grossheim recommends ligation of lymphatic goitres which are densely adherent and difficult of dissection. And yet the consequent enlargement and inflammatory reaction after its use can hardly be said to improve the pre-existing pressure-symptoms. The open method of operation is to be preferred. After exposing the goitre a double snare is passed through its base and the two sides are tied separately (Stark). If the pedicle is very thick, the ends of the ligatures are held in specially devised instruments and the loop is tightened from day to day until the growth yields to necrosis. Rigal has recently advocated a method for subcutaneous ligation. It is needless to remark that the foregoing surgical practices are not to be countenanced in the treatment of scirrhus goitre.

446 *Rose Building.*

---

A "Gorgas Medal," to be given yearly in honor of Surgeon-General Gorgas, has been established by the Medical Reserve Corps, U. S. Army, New York State Division. This medal is open to competition to members of the Medical Corps of the United States Army, to Medical Reserve Corps of the Army and to members of the medical corps of the organized militia. Officers may submit papers on any subject of a medico-military nature.



## SCOPOLAMIN AMNESIA IN LABOR

By JOSEPH T. SMITH, Jr., Cleveland

During the past few months the avalanche of material treating of "Twilight Sleep" in certain classes of popular magazines has been rather overwhelming to our professional ideals. It seems as though a physician could hardly degrade himself or his patients more abysmally than report says one recently did in a New York department store. This "doc" and this patient delivered lectures to whomsoever chose to attend, telling of the wonderful value of "Dammerschlaf" in this particular case. As a crowd-drawer for a bargain counter, Scopolamin proved a great success. The promoter of that scheme did not suffer from twilight or any other kind of sleep, but proved himself a "wide-awake business man."

The danger is that, nauseated by such spectacles, the medical profession in this country may turn in disgust from a discovery that has elements of real value we cannot afford to lose. It is even possible that the recent insistent popular demand for twilight sleep may prove of value by driving our better men, *volentes nolentes*, back to a study of this method. It seems, therefore, as though it were a duty to put on record as many cases as possible, that a mass of material may accumulate in the literature large enough to give future studies more value.

Let us realize, first of all, that there is nothing new about "Dammerschlaf." First used in 1903 by Von Steinbuchel<sup>1</sup>, it was taken up by Weingarten, Ziffer, Pusching, Bertino, and others. Most of these soon gave it up as dangerous. Especially did Leopold and Veit<sup>5</sup> fear the foetal and postpartum hemorrhages that resulted. Hocheisen<sup>3</sup> and Steffens<sup>4</sup>, after tests in 100 and 300 cases respectively, both strongly condemned its use, and still regard it as dangerous.

Meanwhile, Gauss and Krönig, of Freiberg, had tested out the method, and in 1906 they published the results of their first 300 cases<sup>2</sup>, Gauss claimed that the bad results of others were entirely due to a faulty technique. The method has been followed and improved at Freiberg till the latest reports claim 4,111 cases delivered in twilight sleep. A recent authoritative statement from Freiberg was presented in America by Krönig in November, 1913<sup>6</sup>. This report is based upon 3,000 cases, with no maternal bad results.

In fairness to the Freiberg clinic, it is necessary to distinguish two methods there in use. The first of these, that of Gauss, is used by him and by his chief nurse, Sister Mary Louise, in all private cases they personally attend. The essence of this method is the use of the memory test to individualize the dosage for different patients. In primiparae, they start injections when good uterine contractions are coming every four or five minutes and continuing at least 30 seconds. The first injection consists of 0.01 (1/6 gr.) morphin muriate and 0.00045 (1/150 gr.) Scopolamin. After a 45-minute interval, the Scopolamin (0.00045) is repeated alone. One-half hour after this second dose, a memory test is applied. The patient is asked how many injections she has had; if she remembers some strange object shown her at the time of her first injection, or the like. The result of this test is recorded, but it is important to realize that Gauss does not consider persistence of memory at this first test as an indication for further injections. Memory tests are repeated every half hour, and if memory still remains 1½ hours after the second injection, a third dose of Scopolamin 0.0003 is given. Further doses depend upon memory tests alone; and must be small, given at long intervals, and without morphia. Holzbach showed that Scopolamin is not completely eliminated by the child's kidneys in less than two hours. To avoid a cumulative intoxication of the child, therefore, the third dose must not follow the second at an interval of less than an hour and a half. Absolute quiet for the patient, with ears plugged and eyes covered, is important to permit a proper development of the condition of "Dammerschlaf." The foetal heart, and the maternal pulse, temperature, and pupil reflexes, must be taken and recorded every half hour; and this must be done in such a manner as not to disturb the patient's quiet—a difficult service to obtain from the average nurse.

We must contrast sharply with this original method of Gauss the more empirical method of standard doses now being used on third and fourth class cases at Freiberg. This is the method seen by most visitors to the clinic. It has been worked out by Siegel in an effort to make the "Dammerschlaf" more widely available, but none—Siegel and Gauss least of all—claim that the method gives the results obtained by individualizing cases by means of the memory test.



In this method, Narcophin (narcotin-morphin meconate) is being substituted experimentally for the morphin muriate formerly used, and still preferred by Gauss in his private cases. In Siegel's method, no memory tests are applied. As a routine matter, the following injections are given:

First injection: Scopolamin 0.00045, Narcophin 0.03.

After 45-minute interval:

Second injection—Scopolamin 0.00045 (alone).

After 45-minute interval:

Third injection—Scopolamin 0.00015, Narcophin 0.015.

After 1½ hour interval:

Fourth injection—Scopolamin 0.00015.

Repeat Scopolamin every 1½ hour.

This method is said to give good maternal results, but many babies breathe badly at birth.

The chief advantages claimed for twilight sleep are as follows: Loss of all memory of labor robs subsequent labors of their terrors. Patients are saved from the nervous shock of the ordeal. The atropin action of Scopolamin upon the muscle fibres of the cervix shortens the first stage of labor. As the second stage is somewhat lengthened, and is less precipitate, fewer perineal lacerations occur.

Against these advantages the following dangers are argued: Postpartum atony of the uterus, with severe hemorrhages; Oligoapnoea and asphyxia of the child; Delirium; and Restlessness, making the preservation of aseptic technique very difficult. Moreover, it is difficult to follow the advancement of labor, as indications are masked by the drug. Therefore, repeated vaginal examinations are required, and make the danger of sepsis greater. The lengthening of the second stage may be injurious to the child, may cause pressure necroses, and certainly calls for more frequent use of forceps.

We have not time to go into this discussion *pro* or *con*. Gauss claims that most of the dangers are caused by one of the following errors in technique. 1. Morphin is given in too large doses, or given with other than the first injection. 2. Hyoscin (from the *Hyosciamus* plant) is substituted for the Scopolamin (from the *Scopola* plant). These alkaloids are said to be chem-

ically identical, but all who have used both agree that no condition like a true "Dammerschlaf" can be obtained with hyoscin. Personally, we can testify to this fact. 3. An attempt is made to dose the patient until *pain* is abolished. All we wish to do is to remove the *memory* of pain. Doses large enough to produce analgesia will injure the child. 4. A decomposed Scopolamin is used, causing the toxin symptoms that have been reported. Scopolamin degenerates rapidly in solution into so-called "apoaotropin." The presence of this substance can be detected in solutions by adding a drop of very dilute potassium permanganate solution. Apoaotropin causes the formation of a brownish-yellow color. Straub has shown that a stable Scopolamin solution may be prepared by adding 10 per cent mannite. This is now marketed in ampules, under the name "Scopomannit."

In 1908, soon after Gauss published his first important paper<sup>2</sup>, it was my good fortune to work under Doctor J. Whitridge Williams, in the obstetrical ward of Johns Hopkins Hospital. We became interested in Gauss' work; and under Doctor Williams' inspiration, a group of selected cases were treated according to the Gauss technique, in so far as we were able to carry out that method accurately. Since that time, we have added one or two cases to the series—very few because of the difficulty of getting patients in proper surroundings for the exhibition of the method, and the further difficulty that it is essential that the physician in charge remain with the patient every minute from first to last.

In this total series of 35 cases, we followed the method of Gauss described earlier in this paper, except in regard to dosage. Starting, in the earlier cases, with 1/150 gr. of Scopolamin and 1/6 gr. morphin as an initial injection, we were never able to obtain anything approximating a "twilight sleep." A slightly "dopy" condition, with added restlessness during pain, was the only visible result. We seemed forced, therefore, to increase the dose. With Scopolamin gr. 1/100 and morphin gr. 1/6 or 1/8 we did begin to get some results, so that dose was later used for the initial injections. We tried in every way to keep the patients absolutely quiet. Our Scopolamin solutions we prepared freshly for each case, using the dry alkaloid as furnished by Merck. No cases presenting pelvic contractions, abnormal presentations, or other exceptional conditions, were included in the series. The three things that most markedly impressed those



who saw these cases in labor were: the great thirst of which practically all complained; the marked restlessness noted in about 60 per cent, and amounting to actual delirium in two cases—one an epileptic; and the lengthening of the second stage. After labor, a few of the children were oligoapnoeic for some hours. There seemed to be a slightly greater tendency to post-partum bleeding than is normal; apparently it is unsafe to use pituitary extract long before delivery in these cases. A uterine atony frequently follows the wearing off of the effects of the extract, and if this condition arises about the time of delivery, severe hemorrhages may follow. In our cases, there seemed no doubt but that the women failed to assist themselves during the second stage as much as they normally could have done. This resulted in forceps operations more frequently than is normal at Johns Hopkins Hospital.

Our largest initial injection consisted of Morphin, gr. 1/6, *plus* Scopolamin, gr. 1/100. The smallest first dose was Morphin. gr. 1/12. *plus* Scopolamin. gr. 1/150. Some cases had but one injection in all. The maximum number of injections in our series was four. In five cases only was morphin repeated. In one of these, morphin was given three times. The greatest total of morphin given any one patient was 1/3 gr. The greatest total of Scopolamin was 1/25 gr., given over a period of nine hours.

In the subjoined table are arranged these thirty-five cases, divided into primiparae and multiparae, and listed under the various complications that arose. As a control, we have tabulated 200 cases delivered at Johns Hopkins Hospital during the same period, under exactly similar surroundings and treatment, but without the use of Scopolamin.

The use of Scopolamin lengthened the labors. It is very difficult, when the drug is being exhibited, to tell just when the second stage begins; and the exact onset of labor is generally vague. Insofar as our notes are reliable, in these thirty-five cases, labor was prolonged beyond the average in primiparae by two hours, and in multiparae by one-half hour.

In the following table, the figures indicate *per cent*:

COMPLICATIONS	Without Scopolamin			With Scopolamin		
	Primiparae 88 Cases	Multiparae 112 Cases	Total 200 Cases	Primiparae 25 Cases	Multiparae 10 Cases	Total 35 Cases
Forceps .....	10	....	4.5	8	10	9
Puerperal Fever (tem- perature over 100.2°, with no proven cause outside the uterus).....	10	5.5	7.5	8	20	11
Asphyxia; child .....	1.1	2.5	2	4	10	6
Still-born .....	2.5	1.8	2	4	....	3
Perineorrhaphy .....	2.5	2.5	2.5	8	10	9
Premature: died .....	4.5	4.5	4.5	....	10	3
Cord prolapsed .....	1.1	0.9	1	....	....	....
Hemorrhage .....	....	1.8	1	4	10	6
Delirium.....	....	0.9	0.5	8	....	6
Twins .....	1.1	0.9	1	....	....	....
Version and extraction..	1.1	5.5	3.5	....	....	....
Abortion .....	....	4.5	2.5	....	....	....
Precipitate labor .....	....	3.6	2	....	....	....
Placenta praevia .....	....	2.7	1.5	....	....	....
Infected abortion (on admission) .....	2.5	3.6	3	....	....	....
Gonococcus infection.....	....	....	....	4	....	3
Epilepsy .....	....	0.9	0.5	4	....	3
Retained secundines .....	....	....	....	....	10	3
Pulmonary tuberculosis..	2.5	....	1	....	10	3
Completion of abortion..	2.5	....	1	....	....	....
Lues .....	1.1	3.6	2.5	....	....	....
Caesarean section .....	2.5	....	1	....	....	....
Pneumonia .....	4	....	1.5	....	....	....
Heart lesions (maternal)	1.1	0.9	1	....	....	....
Eclampsia .....	7	2.5	4.5	....	....	....
Vaginal Caesarean .....	1.1	....	0.5	....	....	....
Ophthalmia neonatorum...	....	0.9	0.5	....	....	....
Cystitis .....	....	1.8	1	....	....	....
Tubal pregnancy .....	....	0.9	0.5	....	....	....
Hydramnios, with mon- ster .....	....	0.9	0.5	....	....	....
Toxaemic vomiting (Vag. Caesarean).....	....	0.9	0.5	....	....	....
Pubiotomy.....	....	0.9	0.5	....	....	....
Phlegmasia Alba .....	....	0.9	0.5	....	....	....
Pharyngitis .....	....	0.9	0.5	....	....	....
Died (maternal).....	1.1*	....	0.5	....	10†	3

\*Eclampsia

†Pulmonary Tuberculosis



Was the method successful in abolishing the memory of labor in these 35 patients? Seven (20%) showed perfect amnesia. These were cases that received relatively large doses, and in this group occurred five complications, such as still-births, serious asphyxia, and a need for forceps. No cases were free from pain during uterine contractions. Fourteen or fifteen cases (40%) showed no loss of memory at all. The remaining patients, when questioned, some days after delivery, had "islands" of memory scattered through the period of labor.

#### Literature

1. Von Steinbuchel: *Beit. z. Geb. u. Gyn.*, 1903.
2. Gauss: *Arch. f. Gyn.*, 1906, lxxviii, No. 3.
3. Hocheisen: *Munch. Med. W'ch'r.*, 1906, liii, No. 37.
4. Steffens: *Arch. f. Gyn.*, 1903, lxxxi, No. 2.
5. Veit: *Therap. Monat.*, 1908, xxii.
6. Krönig: *Surg. Gyn. and Obstet.*, May, 1914.
7. Harrar and McPherson, *Am. Jr. Obstet.*, Oct., 1914.
8. Zinke, Polak, Knipe, Gellhorn, Schloessing, DeLee, Applegate, Hirst, Bovée, Bell, *Med. Times*, Dec., 1914.
9. Polak: *Long Island Med. Jr.*, Dec., 1914.
10. Humpstone: *Long Island Med. Jr.*, Dec., 1914.
11. Knipe: *Am. Jr. Obstet.*, Dec., 1914.

628 *Rose Building.*

**Using the Medical Profession as an Advertising Agency.**—*The Journal of the American Medical Association* has called attention repeatedly to the way in which the medical profession has been used by the exploiters of proprietary medicine for the purpose of introducing their wares to the public. "In the past, one of the cheapest methods of putting a 'patent medicine' on the market," says *The Journal*, "has been to call the stuff an 'ethical proprietary,' advertising it exclusively in medical journals (whose advertising rates are much less than those of newspapers), freely sample the medical profession, put up the product in packages that are plainly intended to give the public all the information that may be necessary—and let time do the rest. And time has done it. When physicians have awakened to the fact that they have once more been used as tools, and the preparation is very plainly nothing but a nostrum, then the shrewd manufacturer turns his back on the medical profession and goes over to the place he belongs—the public press. The Advertising Association of Chicago, in its weekly bulletin for January 4, 1915, prints a letter that has been received by an American advertising man from a German firm that wanted to place a medicinal product on the American market. One paragraph in the letter bears on the matter under discussion. Here it is:

"We beg to mention that the preparations are to be puffed in the first rank and principally so that the physicians (doctors) get acquainted with the same, and it is not necessary to puff them *for the present* in other classes of the public."

"We have italicized the three words that have a special significance. Put more crudely, the proprietors of this preparation say: Advertise it at first exclusively to physicians and after they have brought it widely to the attention of the public, then it will be time enough for us to advertise it direct to the public. How long is the medical profession going to retain its unenviable distinction of being a huge advertising agency for the nostrum exploiter?"

**Examination of Candidates for Assistant Surgeon.**—Boards of commissioned medical officers will be convened to meet at the Bureau of Public Service, 3 "B" street, S. E., Washington, D. C., and at the Marine Hospitals of Boston, Mass.; New York, N. Y.; Chicago, Ill.; St. Louis, Mo.; Louisville, Ky.; New Orleans, La., and San Francisco, Cal., on Monday, March 8, 1915, at 10 o'clock A. M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health Service, when applications for examination at these stations are received in the Bureau.

Candidates must be between 23 and 32 years of age, graduates of a reputable medical college, and must furnish testimonials from two responsible persons as to their professional and moral character. Service in hospitals for the insane or experience in the detection of mental diseases will be considered and credit given in the examination. Candidates must have had one year's hospital experience or two years' professional work.

Candidates must be not less than 5 feet, 4 inches, nor more than 6 feet, 2 inches, in height.

The following is the usual order of the examinations: 1. Physical 2. Oral; 3. Written; 4. Clinical.

In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate, and that they will serve wherever assigned to duty.

The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists of examination in the various branches of medicine, surgery, and hygiene.

The oral examination includes subjects of preliminary education, history, literature, and natural sciences.

The clinical examination is conducted at a hospital.

The examination usually covers a period of about ten days.

Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order. They will receive early appointments.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon.

Assistant surgeons receive \$2,000, passed assistant surgeons \$2,400, surgeons \$3,000, senior surgeons \$3,500, and assistant surgeon generals \$4,000 a year. When quarters are not provided, commutation at the rate of \$30, \$40 and \$50 a month, according to grade, is allowed.

All grades receive longevity pay, 10 per cent in addition to the regular salary for every five years, up to 40 per cent after twenty years' service.

The tenure of office is permanent. Officers traveling under orders are allowed actual expenses.

For invitations to appear before the board of examiners, address "Surgeon-General, Public Health Service, Washington, D. C."



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH STONE

2318 PROSPECT AVENUE

ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.

JOHN PHILLIPS, M. B.

ROGER G. PERKINS, M. D.

T. WINGATE TODD, F. R. C. S.

COLLABORATORS

C. E. FORD, M. D.

H. L. SANFORD, M. D.

H. E. HANDERSON, M. D.

J. J. R. MACLEOD, M. D.

W. T. HOWARD, M. D.

T. SOLLMANN, M. D.

V. C. ROWLAND, M. D.

G. N. STEWART, M. D.

S. W. KELLEY, M. D.

J. E. TUCKERMAN, M. D.

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902

Capital Stock \$6,000

EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.

*Secretary*, C. A. HAMANN, M. D.

*Vice-President*, C. E. BRIGGS, M. D.

*Treasurer*, H. G. SHERMAN, M. D.

BOARD OF DIRECTORS

C. E. BRIGGS, M. D.

C. F. HOOVER, M. D.

S. H. LARGE, M. D.

F. E. BUNTS, M. D.

J. P. SAWYER, M. D.

J. B. MCGEE, M. D.

G. W. CRILE, M. D.

H. G. SHERMAN, M. D.

W. H. WEIR, M. D.

C. A. HAMANN, M. D.

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

---

## EDITORIAL

---

**Hunter Holmes Powell**

---

Doctor Hunter Holmes Powell, one of the best known physicians of Cleveland and one of the oldest in active practice, died at his home, 2714 Prospect avenue, January 9th, 1915, at the age of 71 years. His death was caused by angina pectoris, slight attacks of which he had suffered for several weeks.

Doctor Powell had practiced his profession in Cleveland for 45 years. He was born in Virginia, where he spent his early years and prepared himself, after the civil war, for a medical career under the guidance of his uncle, the famous surgeon, Hunter McGuire, graduating from the Virginia Medical College in 1867. He began practice in his home town, Winchester, Virginia, but decided, at the end of three years, to seek wider fields, and removed to Cleveland in April, 1872, a youth unheralded and unknown.

His early training under Doctor McGuire had fitted him for a surgical career, but the new field was so well filled and the opportunities so limited at the time that he decided to devote himself to medicine, eventually making a special study of obstetrics and pediatrics. His activities in surgery were confined to a short term as visiting surgeon to the U. S. Marine Hospital at Cleveland in the early seventies.

His interest in medical education was manifested soon after his arrival in Cleveland, as he became associated with the faculty of Western Reserve Medical College in the fall of 1872 as instructor in diseases of children, thus beginning that remarkable career as a teacher which continued uninterruptedly for forty years.

In 1875 he was made professor of diseases of children and in 1878 professor of obstetrics and pediatrics. He performed both functions until 1907, when the two departments were separated and he became Emeritus Professor of Obstetrics, thus completing thirty-five years, full of most notable service both to the college and its graduates.

In addition to his arduous professional duties, he assumed those of Dean of the Faculty in 1895 and performed them with distinction for five years. In 1894 the Western Reserve University bestowed upon him the degree of Master of Arts.

Doctor Powell in the class room was always interesting, always practical. As a teacher he was at his best, charming everyone with his soft, southern accent and his delightful manner. He had an unusual command of language, was never at a loss for a word and always gave the impression that he took the greatest pleasure in lecturing, as, indeed, he did. He had the rare gift of lucidity and never left his hearers in doubt as to his meaning.



It was no unusual occurrence at the alumni reunions for some of the oldest graduates to remind him of practical suggestions he had given them in the class room which they had remembered and of which they made use in after years. These reminiscences afforded him keen pleasure, particularly when accompanied by amusing anecdotes.

He was fond, too, of enlivening his lectures with droll stories, which were always to the point, and were received with delighted appreciation. Many of these practical illustrations are still being used by his successors with good effect.

His unique personality made a profound impression upon the many hundreds of students who thronged his class room during the two score years of his professorship and who found in him not only a valued teacher but a faithful friend and wise counsellor. In his death those who survive him feel a profound sense of personal loss, as of a very near and dear friend.

Doctor Powell had had a large and lucrative practice for many years. He did not limit his activities to his special field and it was characteristic of him that, in spite of his recognized qualifications, he refused to regard himself as a specialist, as he had no sympathy with the modern trend in that direction.

His deep and abiding interest in his profession was an inspiration and an example to all his colleagues who were associated with him. At the bedside he displayed rare judgment in diagnosis and great skill in treatment. His personal magnetism played a large part in his success and often was of as much benefit to his patients as the drugs he employed.

He had a wonderful gift of inspiring confidence in his patients and they regarded him not only as their physician but as their wise friend and comforter in time of trouble or affliction.


The interest of his patients and the study of his cases were his chief concern and he was extraordinarily indifferent to the financial returns of his practice. While his tastes were most refined and his enjoyment of mental pleasures most keen, his personal requirements were of the simplest character. He often said that nature had not designed him to be a rich man. His treasures were his family, his patients and his friends. Two daughters and a son survive him.

Although busily engaged in teaching and in private practice, Doctor Powell gave generously of his time and thought to medical charities. For more than thirty years he was the presiding

genius of St. Ann's Maternity Hospital, in whose welfare and progress he always took the liveliest interest. He had no truer or warmer friends than the sisters in charge of this institution. He was for many years a member of the consulting staff of Charity Hospital and the visiting staff of Lakeside Hospital. He assisted in the organization of the Babies' Dispensary and Hospital and was an active member of the board of trustees. He was a member of the Milk Commission of the Academy of Medicine from the time of its organization in 1904 and was its president at the time of his death. He was also a member of the Academy of Medicine and of the Cleveland Medical Library. At the meetings of the former society his discussions were always welcomed, being marked by excellent judgment and keen, but kindly wit. He died, as he hoped he would, "in the harness," in full possession of his powers and faculties. It was a fitting end to a life so nobly lived.

"His life was gentle, and the elements  
So mixed in him, that nature might stand up  
And say to all the world, this was a man."

J. J. T.



*We ask the kind tolerance of our subscribers and advertisers in the publication of this, our January issue, at such a late date.*

*It had been our hope and plan to make the January number a memorial issue, but the very considerable delay in the return of contributions to us, has necessitated a rearrangement of matter, and we now expect to make the February number a memorial to the late Doctor Dudley P. Allen.*



## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. McGee, M. D., Cleveland

**Pneumonia:** In the *Medical Record* for December 12, Simon Baruch considers the management of pneumonia, from the hydrotherapeutic standpoint, stating that his present policy is that of managing the patient by sustaining his resisting capacity rather than battling with the disease. He reviews the various lines usually advised, and believes that the serious obstacle to the popularization of hydrotherapy has been the indefinite counsel on the subject by our best authorities on practice. He believes the profession is beginning to accept his contention that water of low temperature is more useful in typhoid fever for its vasomotor stimulating action than for temperature reductions, and pleads for the same idea in other acute and chronic conditions. He asserts that its recognition would insure more recoveries from pneumonia, sunstroke and tuberculosis and more rapid improvement in neurasthenia and other neuroses. The only drug which he uses in six to ten-grain doses, dry in the mouth, washed down after rinsing, and it is not repeated. The mouth is rinsed with a saturated solution of potassium chlorate every hour. Heart stimulants were rarely required in his cases treated early. Alcohol is needed by alcoholic habitues, whose nervous system requires a fillip. In consultation, a sinking patient, expected to die, was saved by withdrawing the glonoin which he was receiving as a stimulant. He believes that the alternate use of hot and cold packs as sometimes advocated is pernicious activity. The only local application that he constantly uses is the wet compress at 60 degrees F. applied around the chest every hour, after it has become warm. This is made of three thicknesses of thin, or two thicknesses of heavy old linen, cut to fit the thorax snugly, and to cover the entire chest from the nucha and clavicle to the last rib. It is wrung out of water at 60 degrees F., spread upon a piece of flannel cut in same shape but one inch longer; one-half of the flannel and damp linen is gathered into a fold, the other spread on the bed, the patient turns on one side, the folded part is placed next to his side so as to reach the nucha at the top; the patient is asked to turn on his back. As he turns upon the outstretched portion of the compress his hands are raised, the folded part of the compress is drawn from under him and is quickly thrown over the chest on both sides; the upper flaps are brought over the clavicle, the flannel is wrapped over the compress and secured by safety pins in front. The patient now lies in a snug, cold vest, as it were. In five or more minutes the temperature of the compress is equalized with that of the skin, and very soon the patient lies in a moderately warm poultice. When the compress is found warm, on examination with the fingers after the lapse of an hour, another is prepared before the first is removed. This hourly envelopment produces striking therapeutic results, and of the number of cases he treated while in general practice he believes he can safely claim an average of five per annum. Hospital cases are not a fair test of therapeutic value, but 156 cases showed a mortality of 33 per cent, while in cases living till the fifth day, the mortality was 72 per cent. He cites also four cases of great severity in which the wet compress proved of greatest value.

---

**Oxygen:** In the December number of the *American Journal of the Medical Sciences*, John McCrae writes concerning the subcutaneous injection of oxygen as a therapeutic measure. In 1912 Derosé published an account of a method of injecting oxygen subcutaneously as being preferable in some cases to the older method of its use by inhalation. Observations appearing in medical literature appear to indicate that the method has been used more in France than elsewhere. The method he has used consists in conducting the gas from the usual high pressure oxygen cylinder in everyday use. To the cylinder is attached the usual valve and wheel by which the escape of the gas is regulated.

Rubber tubing about 1 cm. in diameter and a small needle complete the equipment. The needles supplied with antitoxin answer very well. The whole is clean, the needle sterilized, tincture of iodine is applied to the skin at any desired part, usually the upper thorax; any part of the body where the skin is lax will do equally well. The needle is placed under the surface of alcohol or sterilized water so that the rate of flow may be observed. Just short of a continuous stream of bubbles answers best, although the rate does not appear to be of much moment. The needle is then pushed through the skin, and according to the less or greater depth to which it reaches, the oxygen will be seen infiltrating in all directions, or a gradually increasing lump rises. The usual procedure is to raise a lump of half the size of a football, thirty seconds or a minute being sufficient time for this amount. If the needle be withdrawn, and the opening stopped by a piece of adhesive plaster, absorption occurs quickly, and in a few minutes the mass will have disappeared, although for several hours the finger can detect crepitation over the spot; with the stethoscope loud crackles may be heard for a couple of days. The distending process, even where it has been fairly sudden, has never in his experience excited any comment upon its painfulness. Oxygen was applied in this manner to 33 patients with a variety of diseases. Without making any claims on behalf of oxygen gas thus administered, it remains to be said that here is an easy method of administration in which there is no waste and in which presumably the oxygen is used as it is needed by the corpuscles and the tissues; further, in cases where respiration is interfered with, or is in abeyance, it may quickly be given, and in as many parts of the body in quick succession as is desired. It seems a desirable addition to the armament of the operating room, as a provision against accidents of anesthesia, the more so as it can be administered by a nurse without interfering with those concerned for the moment in other active measures. He found the following states amenable to its use: 1. Accidents from anesthesia. 2. Edema of the lungs, edema of the glottis, and accidental interference with respiration by disease of the upper part of the respiratory tract. 3. Marked dyspnea with defective oxygenation, as in cardiac and renal disease. 4. Asphyxia of infants at birth. 5. Syncope. 6. Electrocution.

---

**Geriatrics:** I. L. Nascher, in *American Medicine* for November, states that some are aged before they are old, some are old but not aged. Geriatrics deals with the senile state, not with the years of life. In maturity nature cures, in senility nature kills. Aid nature in maturity, prevent death in senility. He advances some geriatric aphorisms, of which those relating to therapeutics are as follows: 1. Rule, increase dose of stimulants and decrease dose of sedatives. 2. Never give drugs in anticipation. Wait till the indication for the use of the drug is clear and stop its use when the desired effect is produced. 3. When KI. has ceased to lower the blood pressure in arteriosclerosis, its further administration is harmful. 4. Belladonna prevents the griping of aloin by counteracting the peristaltic stimulation of the latter. Much smaller doses of aloin can be given if the belladonna is omitted. 5. Secondary effects of drugs may act more powerfully upon the senile organism than the primary or desired effect. 6. Morphin is a powerful respiratory depressant in the aged. If given per os, atropin should be given a few minutes later; if given hypodermically, they should be given together. 7. No cardiac stimulants while compensation is complete. 8. Drugs containing tannin are absorbed slowly or not at all. 9. Mineral oil in large doses does more harm than good. It coats the intestinal walls, interfering with the secretion of the already diminished intestinal juices. 10. Drugs act differently upon senile degenerating tissues than they do upon the normal tissues in maturity. They should be given singly if possible, and the action of each determined in each individual case.



**Pneumonia:** The December number of the *Therapeutic Gazette* states editorially that it has long been the opinion of medical men of experience that in certain cases of pneumonia which are severe in type possible failure of the vasomotor system is a factor which must be constantly borne in mind. This dread of vascular relaxation is in some cases probably exaggerated, and leads the physician to overestimation in the early stages of the disease, with the result that the depression which he dreads is the more likely to be developed later on. It is also probably true that in some instances circulatory failure is thought to be due to giving way of the vasomotor apparatus, when in reality the cause is heart-clog or profound toxæmia. Be the frequency of the vasomotor failure frequent or rare as a complication, it is of the greatest importance that we should have a clear understanding concerning it. Relative to this a recent statement is made by Porter and two associates that "it has long been held that the toxins of pneumonia specifically injure the vasomotor cells," and further "this proposition we deny." The experiments were made upon rabbits, cats and dogs. All clinicians of experience know that when croupous pneumonia attacks a patient the toxæmia is, in the majority of instances, in inverse ratio to the area of the lung which is involved. How frequently do we see a fulminant pneumonia destroy life within a few days, when the pulmonary lesion is so small as to be found with difficulty, and how frequently do we meet with cases in which large areas of the lung are consolidated, and yet in which the general symptoms manifested by the patient are so moderate that at no time is he desperately ill? The statement, therefore, made by Porter and his colleagues, that they have proved that the vasomotor system is intact in animals "about to die with wholly consolidated lungs," does not justify their contention that vasomotor depression does not occur in human beings suffering from pneumococcus lesions in the lung. The protest is not against animal experimentation, but against drawing dogmatic conclusions from insufficient evidence.

---

**Leukemia:** An editorial in *Merck's Archives* for November, in considering the treatment of leukemia, states that, satisfactory as our diagnostic methods are, unfortunately little can be said about the etiology of this peculiar disease. It follows that our treatment can only be symptomatic and directed toward the pathological hyperplasia and hyperfunctions. In former years the use of arsenic alone gave promise of some result, and at present there is a tendency to overlook this very valuable drug in favor of more recent therapy. It possesses, however, pronounced tonic effects and a specific action upon the leukemic tumors. Hahn advises starting every case, if it is in the early stages, with an arsenic cure. The form of arsenic employed is of little consequence, but especially good results have followed daily injections of sodium cacodylate. The effect of the Röntgen rays is an American discovery. To obtain a deep effect, hard tubes are preferred. The dosage should be frequent and not too large, as a sudden, enormous reduction of white cells, hemorrhage diathesis and necrotic angina leading to death may follow. On the other hand, too small doses may stimulate rather than depress the formation of leucocytes. Thus several cases have been reported in leukemia developing in those who are exposed much to the rays. In the lymphatic type, every available lymph node is treated, while in the myelogenous type more good will follow exposure of the spleen than of the bones. Good results after the use of the Röntgen rays are seen in about 75 per cent of the cases, and in a few there seems almost to be a cure. The lymphatic type is less amenable to treatment as are also the relapses which occur sooner or later. In every case the blood should be carefully watched. A contraindication to further treatment with the X-rays is the appearance of numerous myeloblasts in the blood, when thorium X followed by arsenic should be substituted. Other drugs used for leukemia are radium, mesothorium and thorium X. These rare ele-

ments possess the advantage that they often act surprisingly well where the Röntgen rays are ineffectual. Thorium X may be given by mouth, intramuscular injection, but preferably by intravenous injection. The subcutaneous injection is usually too painful. As it is excreted to a great extent by the intestines, the bowel should be kept open. The myelogenous form is more amenable to this treatment, and as with the rays, the blood must constantly be examined. Of more importance to the general practitioner is the use of benzol. This drug also has a tendency to cause degenerative changes in the liver and kidneys, and about 50 per cent of the cases, particularly the lymphatic type, prove refractory. There may be a period of latency lasting for weeks, during which time the number of white cells may even increase, but soon a pronounced improvement will be noticed in suitable cases. The dose recommended is 4 gm. daily in gelatin capsules, diluted with an equal amount of olive oil. Some prefer to give the drug by rectum, but the subcutaneous or intramuscular injection is too painful. It is best to discontinue treatment as soon as the whites have fallen to 20,000. The opinion of the value of these drugs still varies. The combined treatment presents the advantage that it is possible to get along with smaller doses; thus 1 gm. benzol a day will usually prove adequate if the X-rays are employed. The Röntgen treatment is the least harmful of all so far as the general organism is concerned. In the aleukemic type where there are merely qualitative changes in the leucocytes and no or very little general increase, conservative treatment is indicated and the comparatively harmless arsenic should generally be selected unless the patient becomes rapidly worse.

---

**Benzol:** The *Medical Review of Reviews* for December states that special significance should attach to the report from Kovany's clinic by Kiralyfi (*Wien. Klin. Woch.*) on the dangers of benzol in leukemia. Kiralyfi believes that the drug should be discontinued as soon as the number of leucocytes begins to decline, and in any case when the count has reached 25,000 or 20,000. This recommendation is based on the fact that the white cells keep on decreasing in number after the drug has been suspended. The author reports a case in which the blood picture was very much improved under treatment, but despite the stoppage of the benzol, the leucocytes continued to diminish to 2,800. Severe epistaxis occurred which persisted, despite attempts to check it, for seven days, and the patient died twenty-two days after the remedy was withdrawn. At that time the white cells had diminished to 460 per cu. mm. Kiralyfi believes that the continued action of the benzol was responsible for the hemorrhage and death.

---

**Industrial Accidents.**—The greatest proportion of industrial accidents occurs on Monday than on any other day of the week. Accidents are said to be due often to fatigue. As, after the day of rest on Sunday, workmen should be less fatigued than on other days, some other factor must be sought to explain this feature of the statistics. It has been suggested that the "blue Monday" accidents are really due to the fact that workmen take more spirituous liquor on Sunday, and thus become unnerved and more liable to accidents during the following twenty-four hours. There is, perhaps, something in this contention, though it has been disputed. In the Massachusetts Industrial Accident Board Reports, in which the official figures are given, there is scarcely more than one-twentieth more accidents on Monday than on Tuesday, while Tuesday is not much above the average in the number of accidents reported for other days. Saturday, of course, shows a noteworthy reduction, because of the half holiday, in some trades.—*J. A. M. A.*



## NEW AND NONOFFICIAL REMEDIES

During December the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

## Merck &amp; Co.:

Arbutin, Merck.  
Benzene, Merck H. P., Crystallizable.  
Digitoxin, Merck.  
Silver Citrate.  
Silver Lactate.

## E. R. Squibb &amp; Sons:

Pyocyaneus Vaccine—boxes of 2 ampules containing respectively 100 and 500 million killed bacilli.

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Pasteur Antirabic Vaccine.—The virus is prepared according to the method of the Hygienic Laboratory, Washington, D. C. A dose is sent by mail each day. Twenty-one to twenty-five doses constitute a treatment. Laboratory of W. T. McDougall, Kansas City, Kansas.

Solution Pituitary Extract.—A solution of a purified extract of the posterior lobe of the pituitary gland of the ox. It is assayed so that 1 cc. represents 0.2 Gm. fresh gland. It is used by hypodermic or intramuscular injection mainly to stimulate the uterus contraction in labor. It is supplied in the form of Ampules containing 1 cc. Solution Pituitary Extract. The H. K. Mulford Co., Philadelphia, Pa. (*Jour. A. M. A.*, Dec. 5, 1914, p. 2043).

Radium Bromide.—The market supply is a mixture of radium bromide and barium bromide and is sold on the basis of its radium content. It is sold for use in applicators, inhalatoriums and injection solutions. Radium bromide is marketed as:

Radium Bromide, Radium Company of America.—All deliveries are made subject to the test of the U. S. Bureau of Standards or any reputable expert designated by the purchaser. The Radium Company of America, Sellersville, Pa.

Radium Sulphate, Radium Co. of America.—This form of radium Chemical Co., Pittsburgh, Pa. (*Jour. A. M. A.*, Dec. 26, 1914, p. 2289).

Radium Carbonate.—The market supply is usually a mixture of radium carbonate and barium carbonate and is sold on the basis of its radium content. It is sold for use in applicators. Radium carbonate is marked as:

Radium Carbonate, Standard Chemical Co.—Sold by the Radium Chemical Co., Pittsburg, Pa. (*Jour. A. M. A.*, Dec. 26, 1914, p. 2289).

Arbutin, Merck.—This brand of Arbutin has been accepted for inclusion with New and Nonofficial Remedies. Merck & Co., New York.

Radium Chloride, Radium Co. of America.—This form of radium chloride has been accepted for inclusion with New and Nonofficial Remedies. Radium Co. of America, Sellersville, Pa.

Radium Sulphate, Radium Co. of America.—This form of radium sulphate has been accepted for inclusion with New and Nonofficial Remedies. Radium Co. of America, Sellersville, Pa. (*Jour. A. M. A.*, Dec. 26, 1914, p. 2290).

Cupric Applicators (Copper Sulphate 20-25 per cent).—Wooden sticks  $6\frac{1}{2}$  inches long, tipped with a mixture of copper sulphate, alum and potassium nitrate, containing 20 to 25 per cent copper sulphate. Antiseptic Supply Co., New York (*Jour. A. M. A.*, Dec. 26, 1914, p. 2290).

## The Academy of Medicine of Cleveland

### ACADEMY MEETING

The one-hundred and fifteenth meeting of the Academy was held Friday, December 18, 1914, at the Cleveland Medical Library, the President, J. J. Thomas, in the chair.

#### Presentation of a Case of Keloid, Following Severe Burn of the Face, by H. N. Cole.

The patient, a man of middle age, was severely burned about the face and hands two years ago by powder. Following the accident an extensive keloid formation developed over the entire lower face.

C. Lee Graber, in discussion, asked the speaker whether he had tried X-ray treatment in the case?

G. E. Follansbee asked the speaker whether he had tried subcutaneous injections of fibrolysin in the case?

H. N. Cole, in closing, said that he had not tried the X-ray treatment in the present case and that he had never seen good results follow its use.

Injections of fibrolysin have been used on the patient, more for their psychic effect, however, than from any hope of good physical results to follow. The case is one in which therapy would probably be of no avail.

The regular program was as follows:

1. The Regulation of Practice in Relation to Special Medicine and Drugless Therapy, by J. W. Clemmer, Columbus, Chairman of the Legislative Committee of the Ohio State Medical Association.

Before the next session of the State Legislature measures are to be introduced which shall provide for the admission to practice of chiropractors and opticians. Other medical cults may seek admission at the same time. These attempts but serve to illustrate the constant efforts of drugless healers of all classes to circumvent measures already enacted providing for the regulation of the practice of medicine in the State of Ohio. The regulation of drugless therapy in the State is a failure. Drugless healers practice promiscuously throughout its territories.

The present law for the regulation of the practice of medicine was passed eighteen years ago, at a time when quacks were rampant in the State. It has accomplished much good. The law was enacted under the direction of a number of different medical denominations. The cults not represented have repeatedly, since that time, tried to force their recognition by securing legal amendments. The multiple standard originally adopted forced the admission of other standards and other cures, with lowered license and lowered requirements.

Nowhere, in any other scientific line, are so many varied legal standards provided as for the medical profession. State boards have provided single standards for practically all other scientific lines. There will constantly develop tendencies toward a single standard in medicine, however, as the studies comprising it become more and more scientific and more thoroughly standardized.

The original purpose of the measure was to restrain from the practice of medicine those who had not passed a license examination. At the present time, however, unlicensed practitioners can ply their art at will.

The medical practice act of Ohio has been reduced to a farce. Why should it be tolerated longer? At its inception physicians took the responsibility for public health. The public, however, thinks that the regulation of the practice of medicine has been adopted for the protection of



the physician rather than for the protection of society. The efforts of the physician have been misconstrued by the public as attempts at the formation of a medical trust. The tendency of the public, in relation to the subject, is to encourage breaking of the law.

The need for a new law to govern medical practice is apparent. In England the regulations define who are qualified to practice medicine, and none are debarred. The State reserves the right, however, to select scientific men for public service.

Some believe that the present plan of restriction can be made efficient. Certain qualifications could be required of all cults and schools, and representatives of all allowed to practice. To be efficient such a system must be administered by a representative of the public. For such a system to be administered by medical boards would mean the development of sectarianism and class dissention. Since ability to practice medicine presupposes certain special knowledge, certain requirements should be made in common of all candidates, from whatsoever school or cult.

The system has been adopted in Pennsylvania, which provides separate standards for every kind of practice, with certain qualifications demanded of all, and certain special qualifications demanded of each candidate, varying with the school or cult which he represents. Certain requirements are also made relative to preliminary education.

One of the prime necessities in medical regulation is a proper understanding between the public and the physician. The interests of each are identical. In this way medical education of the public mind is one of prime importance. In this way alone, can the public be kept from the pitfalls of commercial medicine. The people must be taught how to protect life and health. A commission should be established for this purpose.

It is desirable that the regulation of the practice of medicine should be in the hands of the public, the physician to participate only in an advisory capacity. Relative to the admission of various new cults to the practice of medicine, the Legislature at its next session should be asked to postpone action on the measures for a year. In the meantime a commission should be appointed to thoroughly investigate the entire subject of medical regulation.

Another amendment to present laws to be proposed by the State Board of Ohio will have reference to the special licensing of specialists. Under the present code any man, on his own initiative, can announce himself as a specialist in any branch. The result is a horde of superficially trained specialists. When a man has completed his specialty he should be required to present his credentials and pass a special examination.

B. R. McClellan, of Xenia, in opening the discussion, agreed with the speaker of the evening that medical education of the public was of prime importance, and also that the administration of medical regulations should be in the hands of laymen, representing the general public. There should be an educational body of some sort, distinct from the board of examination and registration, which should endeavor to have a competent law put into effect to protect the public from quacks. It should have charge of the administration of such a measure. It should consist of laymen.

At the next session of the Legislature, when three or four drugless cults will ask for laws to protect their fads, the first move of the committee should be to attempt to block their proposals by securing a postponement of the decision of the governing body on the subject. A special commission should be asked for, to investigate the entire subject of medical regulation thoroughly, relative to the securing of a new law. Non-medical men should control the commission. If efforts to block the drugless cult prove unavailing, amendments providing that they be

put under control of the State Board should be offered. Requirements should be placed at such a level for them that they will not constitute a menace to public health.

W. E. Lower, in discussion, declared that the present regulations have been so weakened that they are impotent and sterile. Entrance requirements for all candidates who wish to practice medicine should be raised, and when these have passed they should be allowed to practice anything that they see fit.

Treatment of disease has not been standardized, and one cannot say arbitrarily that this or that remedy is the only remedy for a certain disease. Rather than fight various cults and thus popularize them in the public mind, it would be better to take over the good points of all.

The wonderful strides in medical education are due not so much to the efforts of physicians as to laymen. Then, would it not be a good idea in the present question to let a commission of laymen go over the field and decide what is needed? This body should not be appointed by the Legislature, perhaps, for it might then be vitiated by politics.

F. E. Bunts, in discussion, said that he was undecided upon many of the points which the speaker of the evening had raised. Upon one point, however, there can be no question. The State should determine the qualifications which shall entitle a man to write M. D. after his name. These qualifications should be made as high as possible. When this has been done, and the status of a doctor of medicine defined, the public could choose any sort of treatment it wanted, but if a scientific, trained man was desired, the public would have to go to a member of the profession.

C. F. Hoover said that any attempt to restrict the right of the public to call upon any person it desired for therapeutic aid was a mistake. The above system is in vogue in Prussia, yet Berlin has more quacks than any city in the world. Many of these are ladies' maids who are acquainted with the foibles of the so-called upper strata of society, and are well equipped to play upon the popular mind. Physicians will accomplish more by raising their own standard than by attempting to prohibit practice. Greater respect for the physician will come with higher standards.

Relative to the State giving examinations, this is an undecided matter. Thus the State of California has rigid examinations. Anyone can commit questions, however. A man may have committed Osler verbatim and yet not know medicine.

W. J. Lichty pointed out that one of the best sources from which the public may receive reliable information relative to medical schools, their status, and the standing of various cults, is from the reports of various foundations, committees and representatives of which have covered the subject exhaustively.

F. C. Waite emphasized that the medical profession is one part of the public, and constitutes that part which understands the true situation better than any other. If physicians were sheep herders in charge of large numbers of sheep in the west, and would leave their charges to the mercy of wolves before they had trained them to take care of themselves, they would be held criminally negligent. The situation is analogous to the present one.

If members of other professions could be interested in the matter, their co-operation would doubtless be an advantage. For the profession to run from responsibilities which it has assumed control of for a number of years, however, would be disastrous.

There should be a central board to govern medical education and the examination of candidates to practice. The question of undergraduate preliminary requirements is a difficult one to settle, especially in



States where the undergraduate schools are of all grades, without any uniform standard.

H. G. Sherman pointed out that truth will ultimately prevail. The Legislature and its committees are reasonable, and it is not a hard matter to make them see the true status of affairs. He also related his experiences in this regard, to prove his point.

C. A. Hamann noted the vast advance which has been made in the standards of medical schools in the past few years. There has further been an effort on the part of State boards of medicine to raise their requirements. The degree of M. D. should be jealously guarded.

It is not the province of the physician to carry out regulation laws. This should be the role of the layman. One of the difficulties is to decide what the limits of the practice of medicine are.

G. H. Matson, Secretary of the State Medical Board of Ohio, said that medical regulation is strictly a proposition of education. Medical laws satisfactory to the profession will never be secured. If such an event does occur, it will be a sign of the inactivity of the profession. Laws everywhere in regard to these matters are unsatisfactory. Numerous amendments are proposed to all every year. Even where the single standard does prevail, special laws have been provided for other cults.

When the present practice law was enacted in 1896 it resulted in driving 1,000 quacks out of the State. For betterment of present conditions several courses are open. The present law can be repealed and a new one passed providing special standards, and providing a common ground for all by requiring a certain ability in diagnosis. The standard for preliminary education must be strict.

Another course open is to provide that all who wish to treat the sick shall be licensed and pay a tax, and come under certain restrictions.

Ernest Cherrington said that a lay commission to be appointed by the Governor, to thresh out the entire situation, would be a good thing both for the public and for the physician. Also, before such a body all schools and cults could present their own phase of the question.

J. W. Clemmer, in closing, reiterated that the presence of drugless healers in every community is proof that the practice act is a failure. The reason for its failure is that different standards were made in the act regarding the matter of therapy. For this reason all references to therapy should be eliminated.

The one necessity at the present time is for a sympathetic understanding between the public and the medical profession. The profession stands on its merits. It needs no defense. However, it is imperative that the public should come to know the true status of the question.

The Annual Reports of the officers and standing committees were submitted and received.

The Secretary, J. E. Tuckerman, made the following report for 1914:

It is the pleasure of the Secretary to submit the following general report in addition to the reports of the Chairmen of Committees:

The Academy has held 10 regular meetings, with an average attendance of 97.

The Council has held 10 meetings during the year, full reports of which have been published in the *Journal*.

The Sections have made the following report to the Council:

	No. Meetings	Total attend.	Average attend.	Present Papers	Cases	Specimens
Clinical and Pathological	8	723	90	15	51	8
Experimental Medicine	6	417	69	20		
Ophth.-Oto-Laryngological	8	170	23	10	11	9
Veterinary	8	78	10	12		

The Ophthalmological and Oto-Laryngological Section had 10 reports of cases aside from the 10 cases presented.

The Experimental Medicine Section stated that, as in the previous year, it had endeavored as much as possible to have correlating programs presented by one department at a time, which has made it more difficult to get material. Nevertheless six meetings were held with a marked increase in average attendance.

Increased interest in both general and sectional meetings is evinced by the marked gain in average attendance throughout the year.

The average attendance at general meetings in 1913 was 85; this year, 97.

The Clinical and Pathological Section averaged in 1913, 56; this year, 90.

The Experimental Medicine Section averaged in 1913, 57; this year, 69.

The Ophthalmological and Oto-Laryngological Section averaged in 1913, 17; this year, 23.

The losses from members dropped for non-payment of dues was but 15 this year as against 22 for last year.

The Veterinary Section showed a steady increase in membership, growing from 18 in 1912 to 26 in 1914.

In closing, the Secretary wishes to express his appreciation of the co-operation of the members of the Council, the members of committees and the secretaries of sections, which has made possible the marked increase in attendance upon meetings and awakened new interest in the affairs of the Academy.

And the Secretary wishes particularly to urge, for the year 1915, a material increase in the membership of the Academy, which can only be accomplished by the active co-operation of every present member.

The Treasurer, J. E. Tuckerman, reported as follows:

Balance on hand, December 12, 1913:

Savings Account .....	\$ 500.00
Checking Account .....	115.10

Receipts:

Membership dues, admission fees, and refund from	
Outing .....	2,595.15
Interest on Savings Account.....	29.34

Disbursements:

Ohio State Medical Association.....	\$ 703.50
O. S. Hubbell Printing Co. (programs, postage, etc.)	519.16
Cleveland Medical Library Association.....	464.00
Cleveland Medical Journal Co.....	464.00
Secretary-Treasurer .....	300.00
Speaker's Expenses .....	85.00
H. V. Weihrauch (reports of meetings for O. S. M.	
A. Jour.) .....	45.00
Cars for Annual Outing.....	32.00
Rosters, Martin Printing Co.....	25.00
C. J. Harding (Projectoscope).....	22.00
Horace Carr (printing notices of dues, etc).....	11.60
Checks Returned (N. S. F.).....	7.00
Electric Enterprise Co. ....	6.90
F. W. Roberts Co. (Office Supplies).....	5.45
Receipt-Label Co. ....	4.75
Elliott Co. (Stencils for Addressing Machine).....	2.63
Davis & Farley.....	2.50
Miscellaneous .....	8.96

Balance on hand December 12, 1914:

Savings Account .....	500.00
Interest on Savings Account.....	29.34
Checking Account .....	.80

\$3,239.59 \$3,239.59



The minutes of the previous meeting were read and approved.

The minutes of the Council meeting of December 9th were read and approved.

C. E. Ford reported for the Committee on Legislation. The report was read, accepted and placed on file.

The report of the Committee on Public Health was read by R. G. Perkins, was accepted and placed on file.

Alvin S. Story reported for the Civic Committee. The report was accepted and placed on file.

In the absence of Willard C. Stoner, the report of the Program Committee was read by the Secretary-Treasurer. The report was accepted and placed on file.

F. T. Kopfsstein reported for the Membership Committee. The report was accepted and placed on file.

A. F. Furrer reported for the Milk Commission. The report was accepted and placed on file. (This report appears in full, following the reports of the Academy.)

The report of the Secretary was read, accepted and placed on file.

The report of the Treasurer was read and referred to the Auditing Committee. H. A. Berkes reported for the Auditing Committee. On motion, the report of the committee was accepted and the report of the Treasurer approved and placed on file.

The chair then appointed as tellers Doctors J. M. Moore, Geo. I. Bauman and C. Lee Graber. The Academy then proceeded to ballot for officers for the ensuing year.

W. H. Weir was called to the chair, and J. J. Thomas delivered his address as retiring President.

The tellers then reported that there was a tie for the office of President, and that the offices of Secretary-Treasurer and Trustees had been elected as follows:

Secretary-Treasurer—J. E. Tuckerman.

Trustees—J. P. Sawyer and W. H. Humiston.

After some discussion from the floor, the President ordered the tellers to prepare for a second ballot for President, which resulted in the election of the following officers.

President—C. F. Hoover.

First Vice-President—M. J. Lichty.

Second Vice President—W. H. Weir.

---

## CLINICAL AND PATHOLOGICAL SECTION

The one hundred and fifth regular meeting of this section was held Friday, December 4, 1914, at the Cleveland Medical Library, the Chairman, A. W. Leuke, presided.

The program was as follows:

1. "Stage Versus Class," Certain Aspects of Fever in Pulmonary Tuberculosis, by G. W. Moorehouse.

Presentation and discussion of the two classifications of pulmonary invalids was suggested by the apparently inadequate appreciation of the significance and seriousness of the occurrence of fever in such cases.

According to the classification of the National Association for the Prevention and Treatment of Tuberculosis, an individual with a single initial lesion in the form of infiltration, limited to the apex or to a por-

tion of one lobe without tuberculous complications, with no constitutional symptoms, or these very slight, with slight or no elevation of temperature, or acceleration of pulse at any time during the twenty-four hours, especially if the patient is at rest, is classified as Stage I, and is further characterized by the terms, incipient and favorable.

Cases assigned to Stage II are characterized by the phrase, "moderately advanced," in which there is no marked impairment of function, or serious tuberculous complications. Stage III, characterized as "far advanced," implies marked impairment of function, local or constitutional, or serious tuberculous complications, with consolidation or cavitation or disseminated areas of softening.

Persons suffering from the disease have also been divided into classes by Marcus Paterson. Class I includes those individuals who are febrile while at rest; Class II, those afebrile while at rest; Class III, those who are afebrile even when under exertion. The individuals of Class II, although afebrile while at rest, become febrile when permitted to exercise.

Toxemia present in each case determines by its amount and action into what class any given individual shall be put. If the patient has bacteria discharged into the blood stream which are not met by an efficient antibody content, he will be febrile even while at rest and belongs to Class I. In the patients composing Class II there is more nearly a balance between the discharge of bacterial products and the antibody content of the tissues. In Class III the antibodies have so completely mastered the toxins that there is absence of fever even during exertion. The above views are maintained by Paterson.

Fibroid and other changes which may occur at the actual site of the lesion are also effective aids in overcoming the infection, as they may prevent the foci from throwing into the blood large amounts of bacterial toxins.

Determination of the presence of fever in a given case is not without difficulties. Thus, it may be overlooked altogether if one depends upon occasional readings of the thermometer, since the rise, although occurring daily, may be of short duration. According to Paterson, fever even up to 100° F., suggest a balance between the bacterial toxins discharged and the antibodies present in the body, provided there are no other evidences of toxemia. When fever is present in a given case, one should think of other possible causes of elevation of temperature, which are especially apt to occur in patients of this kind. Thus it may be due to digestive disturbance, which is particularly associated.

Paterson, in treatment of cases at Brompton Hospital Sanatorium, makes use of the presumption that it is the presence of bacterial products, in sufficient but not overwhelming amount, which leads to efficient production of protective substances in the patient's own body. This increase of bacterial toxins in the patient's circulation and tissues is secured by exercise, gradually increased to five or more hours hard work. Manifestations of toxemia are treated by rest as absolute as that provided for a typhoid patient.

In the consideration of groups of cases a recognition of the stage in which a patient is, is of distinct prognostic value. Barring well-recognized difficulties in the diagnosis of certain cases of tuberculosis, any patient may be assigned to the appropriate stage after the completion of the first physical examination, combined with an adequate history. On account of the definiteness with which the assignment has been worked out, and on account of its prognostic value, a classification by stages should be invariably employed in reporting methods or results of treatment.

Assignment of a patient to his proper class can only be made after considerable observation. However, its recognition is important because



in whatever stage the patient may be, an entrance to Class III is a necessity if favorable result is to be obtained.

C. E. Briggs, in opening the discussion, called attention to the surgical application of Paterson's method of increasing the antibody content of the body by irritation. It is of interest especially in the treatment of tuberculous joints. It has been advocated that the local resistance to tuberculosis in the joints be raised by irritation of the part, brought on by motion. Such patients would more or less correspond to Stage II. Reaching this, it would take courage to attempt the method, which would thereby increase the dose of the toxins. The method has never been employed by the speaker and he has never seen any good results obtained from it.

G. W. Moorehouse, in closing, said that he did not believe in the application of the theory himself. The author of the method does not appreciate sufficiently the importance of the walling off processes. He does not hint that he finds cases in which he does not employ the method, but such, nevertheless, must be true.

A patient suffering from tuberculosis may be in good condition generally, except for the lack of air space. Paterson, in certain instances, puts his patients in complete rest. Rest is especially valuable in early cases.

(Doctor Moorehouse's paper was published in full in the December, 1914, issue of the *Journal*.)

## 2. Hirschsprung's Disease, with Report of a Case, by W. E. Lower.

Interest of the medical profession in the condition under discussion dates back to 1835 and 1836, when a number of cases were reported. Congenital idiopathic dilatation of the colon, which is one of the common names which has been applied to it, is incorrect and should be changed.

The explanations for the occurrence of the condition are manifold, and classifications have been attempted, under mechanical, neuropathic, congenital and other heads, each with its numerous sub-heads. It is possible that the condition is caused by early complete obstruction of the colon, which is later followed by dilatation. Of nineteen cases, ten were in children under one year, and six in children under six.

Among the symptoms are constipation and a distended abdomen. The distention may reach unusual proportions. The skin is very tense and glossy. The abdominal walls are thin from muscular atrophy. Fecal vomiting and tumor may be symptoms. The attacks may be intermittent.

The prognosis, according to statistics, is variable. The older writers claimed a mortality of 74 per cent. Later 48 per cent was given as the total number of deaths in a series. The last statistics, in 1907, gave the mortality as 66 per cent.

Included under the medical treatment of the condition is regulation of diet, cathartics, enemas, electricity and the rectal tube. The surgical treatment has not been standardized as yet. Among the methods used are: intestinal puncture, which has not been a success; intra-abdominal massage, which is merely a preliminary measure; colotomy, in which the bowel is simply opened, its contents removed, and then closed again; coloplication; entero-anastomosis, in which results have been good; and resection, which last is the operation of choice.

The patient operated by the speaker was a boy, aged 11, who had had constipation from birth, with marked distention. Resection of the colon was the method of treatment. The patient died several days later.

(Doctor Lower's paper appears in full in this issue.)

### 3. Prognosis and Treatment of Acute Nephritis, by John Phillips.

Many authorities say that there is never a complete recovery following an acute nephritis. The cause of the condition is undoubtedly a factor. If it follows one of the acute infections it is more likely to terminate fatally. Where patients receive careful treatment, however, many recover absolutely, even when the amount of albumen is large and even when it has persisted for as long as nine months. Will these patients later again develop a nephritis? Perhaps, but many cases now under observation by the speaker show no increase in blood pressure, no hypertrophy of the heart, and are, presumably, in excellent health.

In the prognosis of cases the phenolsulphonephthalein method is helpful. Estimation of the nonprotein nitrogen in blood is also helpful. Normally it varies from 22 to 26 gms. per 100 c.c. If the estimation shows between 50 and 75 gm. then the condition is acute. If the estimation shows 100 gms. then there is danger of acute uremia.

Relative to prophylaxis, patients suffering with acute infectious diseases should be kept in bed for a long time, on a restricted diet. Every possible focus of infection should be removed. Drugs, irritating to the kidney, should be avoided. Exposure to cold and passive congestion should be avoided in acute diseases. Drugs for the support of the heart are valuable.

The patient should be kept in bed, warmly covered, the kidney function lessened by increased work of the bowels. Calomel should be avoided as irritating to the kidney. Salts or Co. Jalap powder are good. Water is the best diuretic. Digitalis, especially the infusion, is an efficient diuretic in heart cases. When edema is present, water should not be pushed. A milk diet is preferable. It lessens the salt intake and has high caloric value.

Sweating, induced by the hot bath, with ice cap to head, is a valuable measure, especially in cases tending to uremia. Sweating and purgation care for the edema. For edema of the legs Southey's tubes, introduced under strict aseptic precautions, are good.

Hypertonus, especially with a transient aphasia or hemiplegia or monoplegia, due to spasm of the blood vessels, calls for the nitrites. In uremia the sweating and purgation should be pushed to the full. Morphin for convulsions. Venesection has been done. Venesection is also good in associated pulmonary edema. Cupping and hot application care for backache. Morphin relieves the headache, or, lumbar puncture may give relief. For the anemia, Bashem's mixture is the best. Sodium bicarbonate and magnesia are best for the vomiting.

The patient should be kept in bed until the kidneys have had an opportunity to get back to their normal condition. After recovery a warm climate should be advised. Infection should be guarded against, and the patient should be careful not to take cold. For these reasons, children, after an attack of acute nephritis, should be kept out of school for from one to three years.

W. E. Lower, in opening the discussion, asked what the speaker's opinion was of the value of Fischer's method? Also, does the streptococcus especially tend to produce acute nephritis? Formerly a pus kidney, with many foci, was considered surgical. Now, however, opinion is changing.

J. G. Spenser, in discussion, called attention to the part which hurried operations on tonsil and adenoid cases, with improper treatment afterward, play in the production of nephritis. What should be the advice to



the patient relative to his subsequent diet? What of the excessive use of tea and coffee? One teaspoonful of cream of tartar in a quart of water makes a good diuretic.

John Phillips, in closing, said that nephritis follows streptococcus infections more than any others. It also follows staphylococcus infections. Relative to Fischer's treatment, the speaker said that he had never used it and was not qualified to give expert opinion.

The patient, after an attack of acute nephritis, should avoid excessive meat, tea and coffee, fried foods, coarse vegetables. The use of condiments should be interdicted. Theocin is irritating to the kidneys. Results from caffein administration are not good. Cream of tartar water is an excellent diuretic. Auto-intoxication may cause nephritis.

(Doctor Phillips' paper will appear in full in the February issue.)

---

### EXPERIMENTAL MEDICINE SECTION

The seventy-seventh regular meeting of this section was held Friday, December 11, 1914, at the Cleveland Medical Library, with David Marine in the chair.

The following program was presented:

(The papers presented will be published in *extenso* in succeeding numbers of this *Journal*.)

#### A Symposium on Primitive Man.

(Illustrated by lantern slides.)

##### 1. Geological Evidence of Man's Antiquity, by T. Wingate Todd.

Remains of man himself can give us internal evidence regarding his physical development, but the external evidence of his development can be gleaned only from geological, paleozoological, botanical and archeological data. Of these the botanical evidence must be omitted for lack of time.

Archeological evidence in the form of implements gives us some evidence of successive stages of culture during the Pleistocene or Glacial period. It suggests to some minds the possibility of a flint-chipping pre-human ancestor away back in Oligocene times.

The typical geological formations of the Glacial period are illustrative of the action directly or indirectly of frost and ice. Those to which special reference is made are breccia, boulder clay and loess, the last mentioned being characteristic of interglacial phases.

Switzerland probably underwent four periods of glaciation, Germany three, Scotland possibly six.

The animals found in the Pleistocene deposits are of tundra, steppe and forest varieties, and give some clue to the climate. Certain of them afford quite definite evidence of the precise position in the Pleistocene of the deposit in which they occur.

Measurements of geological time are made by comparing the rates of deposit and erosion or the advance and recession of glaciers with the rate of similar occurrences today. The most recent method is that involving the estimation of the Helium content of rocks. Penck's estimate of the length of the Glacial period is 500,000 to 1,000,000 years; that of the Recent period from the climax of the last glaciation till now is only 30,000 to 50,000 years.

## 2. The Brain in Primitive Man, by Davidson Black.

All evidence of man's antiquity and of his primitive structure and civilization depends upon the natural preservation in geological strata of known age, of certain hard parts such as the skeleton and teeth and of certain stone implements of human manufacture. Only under exceptional conditions and in comparatively recent times do we find such soft parts as the brain preserved for our inspection by natural agents. How, then, can we gain any knowledge of the structure of this perishable organ in primitive man?

So close is the growth relationship between the bony cranium and its contained structures that inequalities upon the surface of the brain, whether due to the presence of blood vessels or of convolutions, are more or less accurately reproduced upon the inner surface of the skull, and much of the form of the brain is revealed from a cast of the skull cavity. Such a cast, however, is not a "brain cast," as it is often loosely termed, but should be more accurately named an "endocranial cast." It should be noted here, however, that the convolutional pattern is more clearly indicated upon the endocranial casts of lower forms than is the case in the Anthropoidea and the Hominidae. (Compare casts of Okapia, Giraffa and Samotherium with those of Gibraltar and Mousterian man.)

It is to the development and differentiation of a special portion of the forebrain that the mammalia as a class owe their progressive rise in importance from early Eocene times. Elliot Smith has termed this special area the Neopallium, and he has shown it to be peculiar to, and characteristic of, the mammalia. In man the specialization and development of the Neopallium reaches its climax, and indeed the present dominant position of man among the mammalia is due solely to this increase in Neopallium.

In the brain, as in other organs, shape and external configuration are dependent upon function and internal structure. Elliot Smith and Ariëns Kappers have demonstrated beyond a doubt that fundamental relationship obtaining between the fissural pattern of the Neopallium and its histological structure. Campbell, Brodmann and numerous other observers have shown that histological structure and physiological activity in the cortex are directly and intimately related—an alteration in structure postulates a change in function. It becomes thus possible, even with our present limited knowledge, to form a fairly accurate estimate of the zoological rank of a gyrencephalous mammal from the study of the sulci and gyri of the cerebrum alone.

Histological examination of the neopallium of the gorilla shows that the great projection centers—motor, general sensibility, auditory and visual—are well developed and but little if any smaller than the same projection areas in Homo. The great difference in the cortical area of the two forms is largely due to the development *between* the projection areas in Homo of the so-called "association areas." The "expansion," although it occurs in all regions, is most marked in the human brain in the Frontal, Parietal and Temporal areas, and in this connection Elliot Smith says that the "distinction between the behavior of man and the other mammals is obviously correlated with the great expansion of the temporo-parietal area."

Regarding the functions of these distinctively human cortical areas, the same author may be quoted as follows: "The temporo-parietal area is the storehouse for the memories of the states of consciousness compounded of visual, auditory and tactile sensations, and its progressive growth and specialization is the measure of the efficiency with which it performs these functions. \* \* \* The prefrontal area is concerned with attention and the orderly control of the psychical activities of the whole cortex."



Between certain limits the total weight of the brain has no known direct bearing upon the mentality of its possessor, and in modern man this weight may vary in sane individuals between the limits of 900 to 1,800 gms. Comparisons may be instituted between archaic and modern brains by the use of Manouvrier's formula ( $W=c \times .87$ )—vide Table Comparison of Brain weights and Volumes.

The brain volume of the most primitive member of the genus homo greatly exceeds that of the largest anthropoid. Pithecanthropus also falls far below the minimum of brain volume essential to the attainment of a truly human status.

However, in as far as absolute cranial capacity is concerned, primitive man, as we know him, cannot be considered inferior to his modern successor. The bulk of the brain in Neanderthal man comes well within the range of normal variation obtaining in this organ in Homo sapiens. Thus the extinction of the Neanderthal type cannot have been due to a deficient cranial capacity on his part.

It is in the relative development of the various cortical areas that the essential difference between primitive and modern man lies; and in Neanderthal man it would appear probable that the comparatively slight expansion of the prefrontal area in proportion to the bulk of the remaining cortex, played no inconsiderable part in his failure in the struggle for existence.

### 3. The Teeth of Primitive Man, by T. Wingate Todd.

In the modern European the crowns of the teeth are rounded, the necks marked, the roots parallel and not fused. In the anthropoids the crowns are squarer and the roots divergent. The constriction at the neck and the absence of fusion of the roots are common to both.

Again, in the modern European the incisors are vertical, the canines reduced, the first mandibular premolar smaller than the second; the first maxillary premolar alone has two definite roots at all frequently, and the third molar is reduced. In the anthropoids the incisors are oblique, the canines large, and the premolars have the same number of roots as the molars. In the gorilla the first mandibular premolar exceeds the second in size. In the orang the roots of all the teeth are very long. In the chimpanzee alone is the third molar reduced.

Such races as the North American Indian, the Australian and the Eskimo exhibit characteristics in their teeth similar to certain features in the dentition of Neanderthal men. But the last mentioned differed in the occlusion of his teeth from the European of today, and from the anthropoid ape. His mastication was characterized by great freedom of lateral movements, which are restricted in ourselves and in anthropoids. Hence we find differences in the teeth of Homo primigenius (Neanderthalensis). The necks are as large or almost as large as the crowns. The roots are short and fused. The incisors slope a little, but the canines are reduced. The premolars show evidence of tending to increase the number of their roots. In some types this is not so.

In Pithecanthropus, the Java fossil, in Dryopithecus, the extinct anthropoid ape, and in Propliopithecus, the extinct Egyptian gibbon, we see stages on or near the line of development of human teeth.

### 4. Skeletal Remains of Primitive Man, by N. William Inghalls, M. D.

Remains of primitive man in the earliest stages of his development, soon after he had parted company with his next akin, the anthropoids, are excessively rare if not entirely wanting. Evidence from a later period, when he was well on the road to his present condition, from a time when he was learning the cunning of his hands and had begun to bury his dead, are much more abundant. Fortunately many of these remains consist of more or less well preserved portions of skulls, which gives them a peculiar interest and value.

In 1891-92 Dubois discovered in Java in an alluvial deposit of late Pliocene or early Pleistocene formation fragmentary remains of a form to which he gave the name of *Pithecanthropus erectus*. The low, flat calvaria with its thick walls was part of a fair-sized skull, which, in its general characters, is intermediate between the Simiidae and Hominidae, but it is doubtful if its possessor can be considered as a connecting link between these two families. The femur does not aid much in attempts to determine the exact status and relationships of this questionable creature. The Heidelberg, or Mauer jaw, found in lower Pleistocene deposits, is remarkable in that we find a dentition readily comparable with that of modern races set in a jaw of very massive proportions. This specimen naturally enables us to draw many definite conclusions as to the rest of the skull, particularly as regards the size and general conformation of the face. The dental arcade is wide, the canines reduced, the large teeth much worn by use, indicating that the lateral movements of the jaw, characteristic of man, were evolved in a very remote past. The Mauer jaw must be given a very low position in the genus *Homo*, being the most primitive human—if not even pre-human—type we know.

*Homo primigenius*, Neanderthal man, is very well represented from various deposits of the Glacial Period (Pleistocene), particularly in western Europe. We are acquainted with earlier and later types as well as with differences of age and sex. He seems to have been a sturdy, uncouth, rather undersized creature, with a short, thick neck and slouching gait. The skulls which have been preserved show well-marked brow-ridges, a low retreating forehead narrowing considerably behind the large high orbits. The teeth were strong and the palate large and wide; evidences of powerful jaw and neck muscles are present. The cranial capacity is somewhat variable, low in the more primitive type (ca. 1,100 c.c.). It attains most impressive proportions at a later period (ca. 1,600 c.c.). The Neanderthaler seems to have been dominant about mid-glacial times—second warm interval—but is gradually lost to view in the temperate period which followed the third glaciation. From this time on we meet other types of man, of uncertain origin, but quite different from and much in advance of the old Neanderthaler. One of these higher races, Cro-Magnon, lived in southwestern France during the Reindeer Epoch. They were a tall, powerfully built people, with a cranial capacity in certain cases far above the modern average. There is nothing in the skeletons of these paleolithic hunters indicative of any inferiority, and in spite of their antiquity we must accord them a rank equal to that of living races—*Homo sapiens*.

---

### COUNCIL MEETING

At a special meeting of the Council of the Academy of Medicine, held Friday evening, December 18, 1914, at the University Club, the following members were present: The President, J. J. Thomas, in the chair; Doctors Sanford, Ingersoll, Marine, Selzer, Kopfstein, Updegraff, Lueke, Weir, Houck, Spurney, Perkins, Ford, Birge, Follansbee, Storey, Yarian and J. E. Tuckerman, and by invitation, F. C. Herrick.

F. T. Kopfstein presented a satisfactory signed statement from Doctor H. F. Biggar. On motion he was elected to membership.

F. C. Herrick read the report of the committee for establishing a tuberculosis sanitarium. After considerable discussion the report of the committee was accepted and the committee was discharged.

---

At a special meeting of the Council of the Academy of Medicine, held Wednesday, December 30, 1914, at the Bismarck, the following members were present: the Vice-President, W. H. Weir, in the chair; Doctors Thomas, Sanford, Webster, Cogan, Way, Sawyer, Humiston and J. E. Tuckerman.



The minutes of the Council meetings of December 9th and December 18th were read and approved.

On motion, the following were appointed chairmen of the Standing Committees:

Legislative Committee, C. E. Ford; Committee on Public Health, R. G. Perkins; Civic Committee, A. S. Storey; Membership Committee, G. W. Moorehouse; Program Committee, H. L. Taylor.

On motion, J. P. Sawyer was appointed a committee of one to confer with the officers of the Medical Library Association and arrange for the use of the Library rooms for the meetings of the Academy.

On motion, W. H. Weir was appointed a committee of one to take up the arrangements for the coming year with the officers of the *Cleveland Medical Journal Company*.

On motion, the Secretary was directed to confer with Mr. C. S. Harding and arrange for the operation of the projectoscope for the coming year.

On motion, the following were reappointed to the Milk Commission for the coming year: Doctors H. H. Powell, J. J. Thomas, H. O. Gerstenberger and S. W. Kelley. The Secretary was directed to communicate this action to the Chamber of Commerce and the Homeopathic Medical Society.

The Secretary presented the credentials of Howard T. Karsner for transfer from the Massachusetts Medical Society to membership in the Academy. On motion the transfer was authorized.

---

At a meeting of the Council of the Academy of Medicine, held Wednesday January 13, 1915, at the Bismarck, the following members were present: The President, C. F. Hoover, in the chair; Doctors Moorehouse, Todd, Houck, Taylor, Ford, Perkins, Webster, Way, Storey, Humiston, Sawyer, Sanford and J. E. Tuckerman.

The minutes of the last meeting of the Council were read and approved.

On motion the resignation of Doctors H. J. Lee and Hunter Robb, who have permanently removed from the city, were accepted.

On motion the resignation of M. T. Runyon, of Oberlin, Ohio, who is retiring from practice, was accepted.

C. E. Ford asked to appoint as members of the Legislative Committee the following, leaving one appointment open for special work: F. C. Waite, Ph. H.; R. E. Skeel, M. D.; C. W. Eddy, V. S. Approved.

R. G. Perkins asked to appoint the following as members of the Committee on Public Health: J. J. R. MacLeod, M. D.; W. H. Merriam, M. D.; E. F. Romig, M. D.; J. C. Placak, M. D. Approved.

Alvin S. Storey asked to appoint as member of the Civic Committee W. J. Benner, leaving one appointment open for special work. Approved.

G. W. Moorehouse asked to appoint the following as members of the Membership Committee: W. J. Abbott, M. D.; W. A. Medlin, M. D.; W. A. Schlesinger, M. D.; J. M. Moore, M. D.; W. J. Manning, M. D.; F. W. Hitchings, M. D.

The Secretary reported that arrangements had been made with Mr. Harding for the operation of the projectoscope during the ensuing year.

A. S. Storey gave a partial report on the suggested plan for group insurance and indemnity against malpractice for Society members. Both J. P. Sawyer and W. H. Humiston discussed the question.

On request of A. S. Storey, Doctor Humiston was made a special member of the Civic Committee to consider this subject.

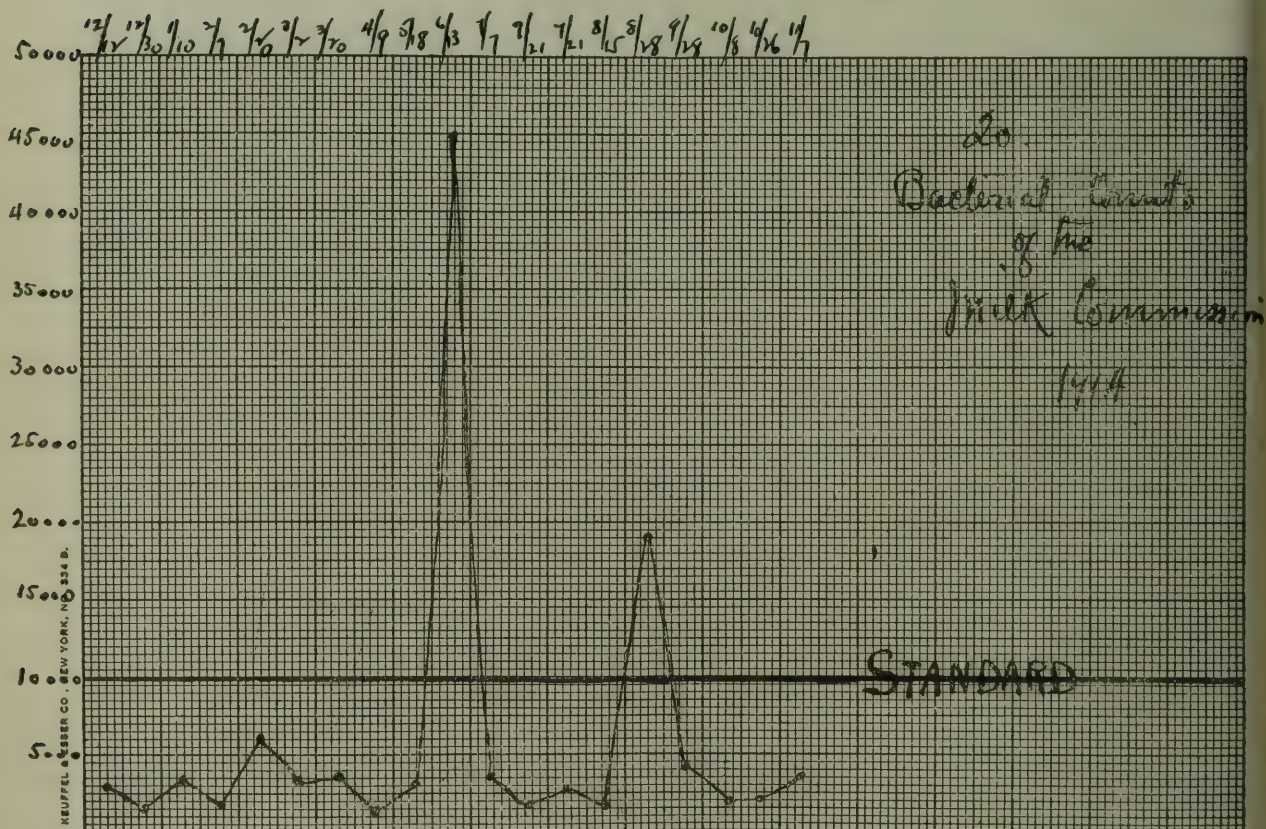
## ANNUAL REPORT OF THE MILK COMMISSION, 1914.

During the past year 12 visits were made to the Milk Farm at Novelty by the Commission's Veterinarian, Doctor Samuel Burrows. At these inspection visits, the cows, stables and milk house are examined and the technique practiced during milking and in the milk house observed. Ten additional inspection visits were made by the Assistant Secretary, Doctor Furrer, the appearance and state of health of the employees being noticed and the general appearance of the barns and milk house observed.

These inspections made by representatives of your Commission at the above-mentioned intervals are supplemented on the part of the producer by daily examinations of all animals by the chief herdsman and his assistant.

Weekly reports are received from the Superintendent in regard to the presence or absence of communicable diseases among the employees. We are glad to report no outbreak of such diseases during the year.

Of the 20 semi-monthly bacterial examinations made during 1914 by



the Commission's bacteriologist, Doctor Perkins, only two were above the 10,000 standard (August 28, 1914, 19,200; June 13, 1914, 45,000), the other 18 were under 5,000. Average of 20 counts, 6,098.

Of these samples, 19 had a temperature under 48 degrees F., one 60 degrees (August 28, undoubtedly the cause of the high count of that sample on that day).

The chemical examinations made by the Commission's chemist, Doctor Haskins, have always revealed a milk coming well within the chemical requirements of the Commission.

The annual tuberculin test, made a few months ago, revealed three reactors out of 148 tested. All reactors were butchered and the barns cleaned and disinfected under the direction of Doctor Burrows. Our tuberculin testing is now sanctioned by the Ohio State Department of



Agriculture, which supplies us with Government tuberculin. Copies of all tests made are forwarded to the State Veterinarian at Columbus.

During the past month (November) three extra visits were made to the farm by our Veterinarian, all animals being examined for signs of foot and mouth disease. We are very glad to be able to report that no signs of the disease were found by Doctor Burrows. As a special precaution, all visitors, particularly cattle-men and farmers, are excluded from visiting the farm for an indefinite period.

It is now a little over a year since the Milk Commission has undertaken the additional function of supervising the modifying laboratory of the Belle-Vernon-Mapes Dairy Company (see annual report, 1913). During that time the Assistant Secretary has made over 150 inspection visits to the laboratory for the Commission. The modified milk is made from six 10-gallon cans of "bulk certified" shipped daily, sealed, from the certified farm at Novelty. From a record of hundreds of bacterial counts made direct from the can of "bulk certified" the interesting conclusion may be drawn that the certified bacterial standard of 10,000 has been exceeded, but in a very few instances in a year, and furthermore, that even after the handling incident to the production of modified milk the standard has been maintained but with few exceptions. B. V. Charts.

As a result of the supervision of the modified milk laboratory as outlined in our last annual report (1913), an almost daily bacterial count is now being made of certified milk, or the modified milk from which it is made, by the Belle-Vernon-Mapes Dairy Company bacteriologist, Mr. Bridgeman. From a total of 896 counts, 96.2 per cent were better than the standard required of the Milk Commission.

### Casein Milk.

By special agreement, the formula and method of making this product coincides as nearly as possible with the Casein milk made by the Babies' Dispensary.

The Secretary and Assistant Secretary, delegated to represent the Cleveland Milk Commission at the annual meeting of Medical Milk Commissions, held at Rochester, N. Y., last June, report a very pleasant and profitable trip. Several model dairy farms were inspected. Rochester test.

In conclusion, it gives us great pleasure to acknowledge once more the cordial relations existing between the Commission and our producer—The Belle-Vernon-Mapes Dairy Company.

We believe that their efforts during the past year in producing modified milk practically conforming with all the exacting standards required of certified milk merits not only the warm approval of your Commission but deserves the appreciation of the entire medical profession.

Respectfully submitted,

J. J. THOMAS, Secretary-Treasurer.

---

**Appointment on International Health Commission.**—Doctor Louis Schapiro, of Milwaukee, has accepted an appointment on the International Health Commission of the Rockefeller Foundation. After traveling through the southern states with other members of the commission, Doctor Schapiro will go to Costa Rica. After initiating work in the eradication of intestinal parasites, he will leave it in charge of local physicians and then probably will take charge of the work in northern Egypt.

## BOOK REVIEWS

A TEXTBOOK OF PATHOLOGY. With a Final Section on Post Mortem Examination and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M. D., L. L. D., Emeritus Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York, and T. Mitchell Prudden, M. D., L. L. D., Emeritus Professor of Pathology, College of Physicians and Surgeons, Columbia University, New York. Revised with the co-operation of Francis Carter Wood, M. D., Director of Cancer Research, Columbia University, New York. 10th Edition; 694 Illustrations; 14 Full-page Plates. Cloth, \$6.00 net. William Wood & Co., New York, 1914.

The latest edition of this most excellent standard text-book is fully up to the high standard set by the previous editions. It has been brought up to date by the incorporation of the more important advances in the knowledge of immunity, pathological physiology, tumor formations and other phases of pathology, in the past three years; and by the addition of many new and excellent references. Some of the old cuts have been improved and new ones added. As a general practical survey of this broad subject, it is unexcelled and, while in many places it is very brief, yet this is offset by the judicious use of excellent references.

H. R. W.

---

**"Speeding Up" and Accidents.**—By far the larger number of industrial accidents occurs at about 10 A. M. and 3 P. M. This fact is confirmed by the reports of two state boards, Washington and Massachusetts, which have secured rather careful records. As they represent the extremes of the country, the conclusions from their statistics would seem to be incontrovertible, though the fact is not what might naturally be expected. The State of Washington Industrial Commission says: "These results seem to disprove the theory that fatigue is the prominent cause of the accidents, because accidents are here shown to happen at the hours when the workmen are least fatigued." On the fatigue theory it might naturally be expected that most accidents would happen after 11 A. M. and 5 P. M. The actual hour of the high point of the curve of accidents shows how important are the facts and how necessary of proof the theories.

After much discussion, the tendency to speed up employment has been incriminated, as the predisposing condition for the occurrence of accidents. This desire comes over the workman when he is not yet fatigued, but has been employed for several hours. He starts the morning's work "cold," and as he warms to his work the danger of mischance because of haste becomes greater. Just when the speeding up reaches a climax in the morning hours, most accidents happen. The same thing is true in the afternoon. Workmen feel sluggish after their lunch, but after an hour of work warm up again, and by about 3 o'clock they are doing their most rapid work, and are at the same time more subject to accident.—J. A. M. A.



## ACKNOWLEDGEMENTS

Gonorrhoea and Its Complications in the Male and Female. By David Watson, M. B., C. M., Lecturer on Venereal Diseases to the University of Glasgow; Surgeon in Charge of the Venereal Department, Glasgow Royal Infirmary; Late Surgeon Glasgow Hospital for Women; Late District Surgeon Glasgow Maternity Hospital, et cetera. Paul B. Hoeber, New York City, 1915. Price, \$3.75 net.

Fever; Its Thermotaxis and Metabolism. By Isaac Ott, A. M., M. D., Professor of Physiology Medico-Chirurgical College, Philadelphia; Member of American Physiological Society; ex-President of American Neurological Association; Consulting Neurologist Norristown Asylum, et cetera. Cloth, 166 pages. Price, \$1.50 net. Paul B. Hoeber, New York.

Therapeutics of the Circulation. By Sir Lauder Brunton, Bt., M. D., D. Sc., LL. D. (Edin.), LL. D. (Aberd.), F. R. C. P., F. R. S., Consulting Physician at St. Bartholomew's Hospital. Second Edition, with Illustrations. Price, \$2.50 net. Paul B. Hoeber, New York, 1914.

Lead Poisoning: From the Industrial, Medical and Social Points of View. Lectures Delivered at The Royal Institute of Public Health. By Sir Thomas Oliver, M. A., M. D., M. R. C. P., Consulting Physician, Royal Victoria Infirmary, and Professor of the Principles and Practice of Medicine, University of Durham College of Medicine, Newcastle-Upon-Tyne; Late Medical Expert, Dangerous Trades Committee, Home Office. Price, \$2.00 net. Paul B. Hoeber, New York, 1914.

Child Training as An Exact Science. A Treatise Based upon the Principles of Modern Psychology, Normal and Abnormal. By George W. Jacoby, M. D., Fellow of the New York Academy of Medicine; Member of the American Medical Association, American Neurological Association, and New York Neurological Society; Consulting Neurologist to the Hospital for Nervous Diseases, The German Hospital, The Beth Israel Hospital, The Red Cross Hospital, and The Infirmary for Women and Children, in the City of New York. With Illustrations. Price, \$1.50 net. Funk & Wagnall's Company, New York and London.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College, Philadelphia, Assisted by Leighton F. Appleman, M. D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Volume XVI, No. 4. December 1, 1914. Price, \$6.00 per annum. Lea & Febiger, New York and Philadelphia.

---

**Industrial Accidents and Child Labor.**—With regard to accidents among children there is no hour of maximum. Accidents occur at all times, and they are comparatively much more frequent among children than adults. The United States Bureau of Labor reported that "there is clear evidence of great liability to accident on the part of children. Though employed in the less hazardous work, their rates steadily exceed those of the older co-workers, even when in that group are included the occupations of relatively high liability." This was said with regard to the Southern cotton mills, but the same thing is true of practically all industries in which children are employed.

The results of these accidents come to the physician. We are devoting much time to the prevention of disease, and we should be ready to give attention to the prevention of injury. Virchow used to say that the ideal function of the physician, besides that of reliever of human ills, is to be the attorney of the poor for the prevention and relief of social ailments, and, above all, the prophylaxis of their physical consequences, whether in lowered health or in maiming injuries.—*J. A. M. A.*

## STATE BOARD EXAMINATIONS

Held at Columbus, December 8-11, 1914

## MATERIA MEDICA AND THERAPEUTICS (Regular)

1. Name three sera whose places in medicine are recognized and give uses of each, also state modes of administration.
2. What symptoms follow the continued use of cocain and morphin? How would you treat an habitue?
3. Name the official preparations of digitalis. Give dose of each. Under what conditions would you prescribe each?
4. Name the principal alkaloids of opium. State use and dose of each.
5. To what class of drugs does bismuth belong? What are the official preparations? State dose of each.
6. Write two prescriptions you would use in diarrhea and give reason for using each.
7. Give mode of applying heat as a remedy. Describe its physiologic action and therapeutic use.
8. What preparations of mercury are employed as cathartics? Give dose of each.
9. What are the uses of narcotics—name the principal ones? Give dose of each.
10. What is atropin, its source, physiological action and dose?

DERMATOLOGY, SYPHILOLOGY, AND DISEASES OF EYE  
EAR, NOSE AND THROAT

1. Define dermatitis. Mention its causes and give treatment.
2. What is pellagra? What are its symptoms and its manifestations upon the skin?
3. Define psoriasis. What is its treatment?
4. Point out the difference between syphilitic eruptions and the common eruptions of the skin.
5. Describe syphilitic gumma, cutaneous. What treatment would you select?
6. Define astigmatism. Mention the principal types. How is diagnosis made and how is it corrected by lenses?
7. Define glaucoma. How established in early diagnosis? Give treatment.
8. Describe atrophic rhinitis—its treatment.
9. Describe chronic catarrhal inflammation of the middle ear.
10. Describe perichondritis of the laryngeal cartilages.

## PRACTICE

1. Give etiology, symptoms and treatment of epidemic cerebrospinal meningitis.
2. What would you suspect from a sudden drop in the blood pressure in a case of typhoid fever?
3. How would you diagnose a case of small-pox, and what measures would you take to prevent the spread of the disease?
4. Give your treatment of a case of croupous pneumonia throughout the course of the disease.
5. Give medical treatment of gastric ulcer with indications calling for surgical interference.
6. Give outline of treatment in lost compensation from nitral insufficiency of heart. Upon what factors would your prognosis depend?
7. What is purpura hemorrhagica? Give treatment.
8. Give etiology, symptoms and treatment of tabes dorsalis.
9. Differentiate between hysteria and epilepsy.
10. Give diagnosis and treatment of acute pleurisy with effusion.



## CHEMISTRY

1. When corrosive sublimate and iodid of potassium solutions are mixed, what chemical changes occur? Give equation.
2. Give chemical difference between arterial and venous blood.
3. Describe and give properties of (a) carbon dioxid; (b) carbon monoxid.
4. Define and give examples of (a) acid; (b) base; (c) acid salt; (d) basic salt.
5. What examination should be made of a given sample of milk to ascertain its fitness for drinking?

## SURGERY

1. How would you treat a cut on the dorsal surface of the hand that had severed all the tendons leading to the fingers?
2. What are the symptoms of acute intestinal obstruction? What treatment would you recommend?
3. Describe complete inguinal hernia, methods of reduction and operation if strangulation occurs.
4. Give the symptoms accompanying the unconsciousness of cranial trauma that demand prompt operative treatment.
5. In the retention of urine of old men, what is the usual obstruction to the passage of a catheter and how is it to be overcome?

## PHYSIOLOGY

1. What is the story of protein digestion?
2. What is understood by specificity in nutrition? What are the two important functions of the fats in nutrition?
3. What are the factors controlling the flow of the lymph?
4. What are the causes of the heart sounds?
5. What do you understand by the myogenic and neurogenic theory of the heart beat?
6. Give a description of fixation of the ovum.
7. Describe the mechanism of accommodation in the eye.
8. Describe the visual area of the cerebrum. What may follow disease of this area?
9. Describe formation, distribution and function of the sebaceous glands.
10. Briefly state mechanism of phonation.

## ANATOMY

1. Give brief description of the large intestine.
2. What organs are supplied with blood through the celiac axis?
3. Where would you locate the fundus of the gall-bladder on the abdominal wall?
4. Name the contents of the abdominal cavity.
5. Describe the spinal column and name its divisions.

## DIAGNOSIS

1. What is understood by "type of respiration"? What pathological condition does each type reveal?
2. In percussing the thorax a decreased resonance in the different thoracic regions is found. What does it denote?
3. Define abnormal breath sounds and state their significance.
4. Describe the abnormal types of vocal resonance. What is their pathological significance?
5. When hemoptysis is present, what disease may be indicated?
6. When the lymphatic glands of the neck are enlarged, what diseases are suggested?
7. State diagnostic significance of the deep reflexes, especially of the knee-jerk.

8. What pathological meaning has the reduplication of the heart sounds?
9. Discriminate between organic and functional heart murmurs.
10. How conduct a physical examination of the kidneys and what diagnostic results may be derived therefrom?

### PATHOLOGY

1. What pathological conditions in the lungs do you find in pulmonary tuberculosis?
2. What is the process of formation of a chronic gastric ulcer?
3. What is the pathology in chronic mitral valvular disease of the heart?
4. What conditions do you find in the kidney in chronic parenchymatous nephritis?
5. What is metastasis in cancer, and give usual route of metastasis in cancer of breast?

### OBSTETRICS

1. Describe briefly the methods of performing podalic and cephalic versions.
2. What is ectopic gestation? Name varieties.
3. How long after the child is born would you wait for the placenta to pass? If delayed what would you do?
4. What is the significance of albuminuria in pregnancy? Give treatment.
5. Give symptoms and treatment for placenta previa before term and at full term.

---

**Examination for Dentists for the U. S. Army.**—The Surgeon-General of the Army announces that examinations for the appointment of Acting Dental Surgeons will be held at Fort Slocum, New York; Columbus Barracks, Ohio; Jefferson Barracks, Missouri; Fort Logan, Colorado, and Fort McDowell, California, on Monday, April 12, 1915.

Application blanks and full information concerning these examinations can be procured by addressing "Surgeon-General, U. S. Army, Washington, D. C."

The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 21 and 27 years of age, a graduate of a dental school legally authorized to confer the degree of D. D. S., and shall be of good moral character and habits.

Acting Dental Surgeons are employed under a three years' contract, at the rate of \$150 per month. They are entitled to traveling allowances in obeying their first orders, in changing stations, and in returning to their homes at termination of service. They also have a privilege of purchasing certain supplies at the Army commissary. After three years' service, if found qualified, they are promoted to the grade of dental surgeon, with the rank of first lieutenant, and receive thereafter the pay and allowances appertaining to that rank.

In order to perfect all necessary arrangements for the examination, applications must be in the possession of the Surgeon-General at least two weeks before the date of examination. Early attention is therefore enjoined upon all intending applicants. There will be nine vacancies to be filled.



# The Cleveland Medical Journal

---

Vol. XIV.

FEBRUARY, 1915

No. 2

---

## THE PROGNOSIS AND TREATMENT OF ACUTE NEPHRITIS

By JOHN PHILLIPS, M. B., Assistant Professor of Medicine, Western Reserve University, Cleveland, Ohio

In considering the prognosis of acute nephritis, there are three obvious possibilities. First, the disease may terminate fatally as the result of the primary condition or complications; second, the patient may recover with a damaged kidney so that he is liable to have, at any time, an acute exacerbation of the now existing chronic nephritis; and third, the patient may make a complete recovery. Many clinicians claim that there is no such fortunate result as complete recovery in acute nephritis, that the kidney is damaged, and though the nephritis may remain latent for a great many years, it eventually will become active. The question of recovery, too, depends upon the cause, those cases of nephritis which follow acute infections, such as tonsilitis, being more likely to terminate favorably. When one takes into consideration patients seen in private practice, where they can be kept in bed a sufficient length of time, and where the diet can be carefully supervised, the prognosis is not so gloomy; indeed, as far as one can possibly judge from physical examination and urine analysis, recovery may take place even when the albumin was present in very large quantity, and the oedema persisted for three months, as illustrated by the first case reported below.

*Case 1:* Mrs. B., aged 36, seen July 8th, 1909, because of an acute infection of the antrum of Highmore on the left side. At that time she had a temperature of 104, and two days later she had some puffiness under the eyes. The examination of the urine revealed a large amount of albumin—six grammes to the litre, and numerous hyaline, blood, and epithelial casts. Within the next few days she developed a general anasarca with fluid in the pleural and peritoneal cavities. Her albumin persisted

during the next three months, in amounts varying from three to eight grammes per litre. At the end of that time she began to grow rapidly better, her oedema disappeared and the albumin grew steadily less, so that at the end of another three months there was only a very faint trace and no casts could be made out. She spent the winter in the South, and on her return no albumin or casts could be found in the urine and she has remained in good health ever since.

*Case 2:* G. B., boy, 5 years of age, seen in April, 1913. After an attack of naso-pharyngitis complicated by inflammation of the cervical glands, he developed a severe hemorrhagic nephritis, with some general anasarca. The urine looked almost like blood, specific gravity 1030, albumin four grammes to the litre, and microscopic examination of the sediment showed numerous red blood cells, blood casts, hyaline and epithelial casts. With rest in bed, baths and regulation of diet, the urine gradually returned to normal, all the albumin disappearing. The urine has been examined every two months since that time and no albumin can be found.

*Case 3:* R. S., male, aged 22 years, street car conductor, seen in March, 1907, because of severe streptococcus tonsillitis. One week later he developed an acute nephritis with six grammes of albumin to the litre and numerous hyaline, epithelial and blood casts in the urine. He remained in the hospital six weeks and at the end of that time all the casts had disappeared from the urine, and there was only a faint trace of albumin. At the end of two months the urine was normal and the patient has continued in perfect health. Although the urine has been examined every six months, nothing pathological can be found.

*Case 4:* J. L. Male, aged 13 years, seen April 10, 1914, because of scarlet fever. In the second week of his disease, he developed an acute nephritis with some general oedema. The urine showed three grammes of albumin to the litre, and numerous casts. In the fifth week he had an acute otitis media on the right side followed by mastoid infection, for which he was operated. He made a good recovery from this, but the albumin persisted for three months, gradually disappearing. His urine has been examined at frequent intervals during the past seven years and has been normal.

The cases above reported illustrate very well the types of cases with acute nephritis, that physicians see in private practice.



In all of them there has been complete recovery as far as one can determine by urine analysis, blood pressure determinations, and lack of cardiac enlargement.

During the acute stage of the disease valuable assistance in estimating the prognosis may be obtained from the estimation of the 'phthalein output, and also from the determination of the non-protein nitrogen in the blood, as recently indicated by Tileston.

In the treatment of acute nephritis the most important thing to be considered is prophylaxis. As far as possible children should be protected from acute infections. This not only applies to the contagious diseases, such as scarlet fever and diphtheria, but to common colds, as nothing is more contagious than the latter. Medical supervision of schools can accomplish a great deal in this direction. A child with an acute cold should be excluded from school. The importance of this is realized when one considers the complications such as otitis media, cervical adenitis and pneumonia, that may follow a simple "head cold." If the patient develops an acute infection, he should be kept in bed. This is particularly true of scarlet fever and diphtheria, in which the child should be kept in bed at least three weeks and the diet should be carefully supervised. No focus of infection should be allowed to remain untreated. The most common sites for foci of infection are the teeth, tonsils, and sinuses in communication with the nose. Considerable emphasis has been laid on the relation of these foci to general systemic infection by Billings, Rosenow, and others, and the relation of these to acute nephritis should not be overlooked. I have seen recently an acute hemorrhagic nephritis following an infection of the hand. It is important, too, to avoid the use of such renal irritants as arsenic, mercury in those diseases which predispose to renal complications. Furthermore, drugs which act as irritants to the kidneys should not be applied in ointments over large surfaces of the body. Long exposure to cold should be avoided. Siegel allowed puppies to stand in ice water for ten minutes and then returned them to cold cages without drying. A number of these developed nephritis, whereas control animals that were properly dried and put in warm cages were unaffected.

The indications in the treatment of acute nephritis are (1) to limit the extension of the inflammatory condition of the kidney; (2) to reduce the work of the kidney to a minimum by re-

striction of diet and increased functioning of the skin and bowels; (3) the treatment of special symptoms such as uraemia and oedema as they arise.

The patient should be put to bed, between blankets, and the temperature of the room should be 68° Fah. Good ventilation is important. It is very important that the patient's stay in bed should be prolonged until the active manifestations of the disease have subsided. In hospitals the patient is often sent home too soon, and he quickly relapses back into his former condition. I am convinced that one of the chief reasons for our often unfavorable prognosis in nephritis, is the fact that patients are not kept in bed a sufficient length of time to recover.

The bowels should be kept freely opened so that two or three watery stools are obtained each day. Saline cathartics are indicated. The best of these are magnesium sulphate, magnesium citrate, sodium phosphate or, if the stomach is irritable, calcined magnesia. In some cases where there is difficulty in getting a free movement of the bowels, compound jalap powder or elaterium may be given.

The diet should be easily digested and should be such that it places as light a burden as possible on the organs of excretion. In the earliest stages of nephritis, milk is the most suitable food, but later a more liberal diet may be allowed. Foods which irritate the kidney should be avoided. Among these may be mentioned meat soups, condiments such as pepper, mustard and horseradish. The proteid should be restricted to 50 grammes daily. As the recovery proceeds this amount may be increased to 85 grammes. To obtain a sufficient number of calories, cream and sugar may be added to the milk. Cream may also be given in the form of cream soups, with cereals or bread, or by diluting it with equal parts of seltzer or Vichy water. In the later stages of the disease, cereals, fruits, bread, potatoes and eggs may be allowed. The amount of salt in the diet should be limited. The chlorides retained in the tissue requires a certain amount of water to maintain them in the proper molecular concentration, thus leading to oedema. A safe rule to follow is to limit the salt intake to two to three grammes daily. The strict limitation of salt is not necessary after the oedema has disappeared. Coffee, tea, tobacco and alcohol should be restricted.



It is important, too, in cases in which oedema is present to limit the total quantity of fluid intake. Probably as good a rule as one can follow in the majority of cases is to give sufficient water to quench the patient's thirst. When in doubt regarding the permeability of the kidney for water, the intake and output should be carefully measured, allowing 500 cc.'s for elimination through the bowel and skin. A further check is systematic weighing of the patient, any increase in weight when a restricted diet is being given suggests retention of water in the tissues. Under ordinary circumstances the maximum excretion in acute nephritis is obtained with one and a quarter to one and one-half quarts of water daily. In the later stages water may be given more freely. Some authors advise once a week flushing out the kidney by giving 3,000 cc.'s of fluid during the 24 hours.

The most efficient means of elimination which we have at our disposal is by increasing the activity of the sweat glands. This may be accomplished by vapor bath, hot packs or hot air baths. The manner in which the sweat is given is of little importance, but personally I have found the most efficient results to be obtained by putting the patient in a hot bath until he begins to perspire, then to transfer him to a bed between warm blankets. An ice cap should be kept on the head during the whole procedure. In severe cases the sweats should be given every four hours, after two days, every six hours, and soon reduced to one or two daily. According to Strauss, the amount of water lost in a good sweat may be one litre. Kovesi has shown that there is included eight to nine grammes of solid matter, 2.86 grammes of which was sodium chloride and 2.08 grammes nitrogen. The value of the sweat does not entirely depend on the amount of water and solids excreted. The blood pressure is lowered so that the left heart is relieved of its work and such symptoms as dyspnoea improved. In the first week a fall of blood pressure from 30 to 40 mm. is not uncommon.

*Diuretics:* The best diuretic is water. The acetates and citrates have no particular value. Caffeine is useful in some cases, as is also diuretin and theocin, but the latter is often an irritant to the kidney. In cases where the heart shows evidence of dilatation the infusion of digitalis freshly made from good leaves is very valuable. In my experience this has been the most satisfactory of the diuretics. For the first two days it should be given

in four drachm doses every four hours. Some have recommended digipuratum, each tablet being equivalent to one and one-half grains of the dried leaf.

### Treatment of Special Symptoms

*Hypertension*: With our present knowledge of the causes of high systolic pressure we do not always consider it good treatment to make attempts to lower it. In fact, high blood pressure may be considered an attempt to pass more blood through the kidney and thus increase elimination. In support of this view are the investigations of Loeb, who showed that lowering the blood pressure decreased elimination both of water and solids. However, if the blood pressure is extreme the danger to the heart and blood vessels may be so great that one is justified in giving nitroglycerine to lower it. This ordinarily is not necessary, as the sweats and catharsis successfully reduce the pressure in the majority of cases. Venesection has been advised, but even with the withdrawal of 16 to 18 ounces the fall in blood pressure is slight. Hence it should not be used except in full-blooded patients.

*Oedema* is best controlled by sweats, catharsis, and restriction of the fluid intake. If there is a large collection of fluid in the peritoneal or pleural cavities this may be removed by paracentesis. Where there is enormous oedema of the limbs Southey's tubes may be tried.

When anuria or uraemia is present, the eliminative measures must be pushed to the limit. If there is oedema, intravenous transfusion or the giving of large quantities of normal saline by rectum is contra indicated. For the nervousness preceding the onset of uraemia great relief is obtained by the administration of bromides.

*Oedema of the glottis* is best treated by application of cold, by scarification, or tracheotomy if necessary.

*Dyspnoea* is usually of cardiac origin and the best results are obtained from the administration of digitalis. Withdrawal of fluid from the body cavities often gives speedy relief. For the severe nocturnal dyspnoea no drug gives such marked relief as morphine. Especially is this true if there is a tendency to pulmonary oedema. In the latter condition, if relief is not obtained by morphine, venesection should be done. Oxygen inhalations are sometimes beneficial.



*Gastric disturbances* are usually symptoms of uraemia and are best treated by the general measures of elimination. Local measures, such as the use of soda, bismuth, are rarely of any value. Lavage is sometimes helpful.

*Headache* is best relieved by the application of an ice bag to the head. In severe cases the coal tar products may be used if the heart is in good condition. The most efficient drug is morphine. In very severe cases relief has been obtained by lumbar puncture.

*Anaemia*: During convalescence there is often severe anaemia; this calls for the administration of iron and the best form is Basham's mixture.

*Convalescence*: It is important that the patient be kept in bed a sufficient length of time for the kidneys to return to as near their normal condition as possible. It is important that the patient should avoid over-exertion, indiscretions in diet and exposure to cold. He should spend the next two or three winters, if possible, in a warm climate. If he acquires any infection, even a simple rhinitis, he should stay in bed until he has recovered. With working men the selection of future occupation is very important. The most difficult and responsible problem that the physician has to shoulder is the regulation of the diet and mode of life of his patient, because on this depends in many cases the question of recurrence of the nephritis.

### *The Osborn Bldg.*

---

**Diabetes Mellitus.**—In view of the reported successful treatment of diabetes mellitus by the administration of the lactic bacillus, A. C. Henderson, New York, reports the results of the treatment in his hands in three cases, under a regular antidiabetic diet, equal to a carbohydrate intake of 15 gm. These cases were observed at Gouverneur Hospital, New York, in the service of Doctor J. H. Huddleston. Another case is reported from the practice of Doctor H. O. Mosenthal. The lactic acid bacillus solution was given regularly, and urinary examinations were all made by one person, with Benedict's modification of Fehling's test for the quantitative determination of glucose, for the qualitative demonstration of acetone, Legal's test; for diacetic acid, Gehrhardt's chlorid reaction. The case histories are given with tabulated statements of the urinary and other examinations. In Doctor Mosenthal's case, the tests were all like this. No improvement was noticed during the treatment, and the conclusion is drawn from these four cases observed casually that the administration of fluid culture of the lactic acid bacillus had no beneficial effect either to the glycosuria or the acidosis.—J. A. M. A.

## A NOTE ON PERI-RENAL AND PERI-URETERAL TUMORS\*

By C. A. HAMANN, M. D., Cleveland

Tumors originating in the retroperitoneal tissues, independently of the organs there situated, are among the unusual forms of abdominal neoplasms, and when they are encountered at operations they come as surprises to the operator as a rule, for pre-operative recognition of the exact position, origin and relation of the growth is very difficult, indeed, generally impossible.

Histologically these growths differ widely; in other words, there are many different kinds. Among them are sarcomata, which are, I believe, the most common; fibromata, myxoma, mesenteric cysts, lipomata, and various combinations of the above. Enlarged lymph glands, as a part of a general process, such as leukaemia, Hodgkin's Disease, and tuberculosis, are not included in the group of tumors at present under discussion.

On several occasions I have found inoperable sarcomata in the retro-peritoneal tissue. Of removable growths, I have encountered one mesenteric cyst, one cystic growth, originating perhaps from remains of the Wolffian body, and the two cases to be mentioned later, viz., peri-renal and peri-ureteral lipomata, which are the especial subject for consideration in this paper.

According to Kelly, the first writer who gave an extensive report on peri-renal tumors was Mankiewitz (*These de Paris*, 1887).

Rimbaud, in 1904, collected 102 cases from the literature, and Adami, in 1896, collected reports of 41 cases of retro-peritoneal lipoma. It has been stated that from one-third to one-half of these retro-peritoneal lipomata arise from the perinephritic fat and the others are either of mesenteric origin or the source is unknown; they may reach very great size, one of 60 lbs. weight having been reported. Reynolds, in 1896, described a very extensive lipoma, which invested both kidneys.

Peri-renal tumors may be subdivided into two groups, the solid and the cystic. The most common cystic growth is an encapsuled peri-renal haematoma (Kelly). Some of the cysts are hydatids, others probably develop from portions of the Wolffian body or duct. They have thin walls, lined by epithelium.

---

\* Read at Lakeside Hospital Medical Society, November 14, 1914.



The treatment of cysts consists in exposing them through a lumbar incision, and, if possible, shelling them out; if this cannot be done, they are to be incised, the cavity swabbed out with iodine, and packed.

The solid peri-renal growths are usually made up of several kinds of tissue. Hartman and Cuneo, quoted by Kelly, found that of 33 tumors, 6 were lipomata, 4 fibro-lipomata, 9 fibromyxolipomata, 2 fibromata, 3 fibromyxomata, 5 fibrosarcomata, 2 angiosarcomata, and 2 mixed tumors.

They are most common in adults, and with the exception of sarcomata do not invade the substance of the kidney, though, as in my case, they may change its form and cause pressure atrophy.

Clinically these tumors manifest themselves as slowly growing neoplasms (except the sarcomata), producing for some time at any rate no local or constitutional signs beyond the enlargement; fatty tumors may present pseudo-fluctuation; pain may be present, and it is said varicocele may occur.

Concerning diagnosis but little can be said, for they can scarcely be differentiated from renal tumors, hydronephrosis and other forms of tumor; they have also been diagnosed as ovarian cysts, and as a matter of fact they can practically never be correctly diagnosed before operation.

Removal is of course indicated, and with the exception of the sarcomata this is generally feasible, either through an anterior or a lumbar incision.

Needless to say, the kidney should not be extirpated with the growth, though in some cases it will be necessary to do so in order to effect complete removal or because of injury to the substance of the organ or of interference with its vessels or the ureter.

An important consideration in the operation is the avoidance of injury to the intestinal vessels, and the intestine itself; the anterior incision is therefore better than the lumbar, for it affords a much better opportunity for careful separation and dissection.

It is said that there is a tendency to recurrence of the benign tumors after removal.

I wish to report two cases, which will illustrate the subject of peri-renal and peri-ureteral tumors:

Mrs. W., aet. 68, had an abdominal tumor which occupied the umbilical and left lumbar region; it did not seem to be con-

nected with any of the organs, and no diagnosis was made prior to operation. A left rectus incision was made and a fatty tumor, lying below the kidney and behind the peritoneum, was found; it was about 6 inches in diameter and shelled out easily. While freeing it, it was noticed that a tubular structure passed right through the center of it; this tubular structure was either a vein or the ureter. Fully recognizing that it might be the latter, it was tied off above and below the growth and the fatty mass was removed. Several smaller lipomata lying near it were also shelled out and the wound closed.

She recovered from the operation, though in the course of a week there was considerable abdominal pain and before she left the hospital a swelling was noticed at the site of the former tumor.

One month after the operation she again presented herself with a large, painful cystic swelling in the region of the left kidney; there was no fever.

Appreciating that the ureter had been tied off, and that now there was a collection of urine in the kidney or its pelvis, a lumbar incision was made and a sac, 5 or 6 inches in diameter, containing urine, was emptied. Part of the sac wall was removed, and the remainder was swabbed out with carbolic acid, and packed. Then the kidney was removed; it was not diseased nor was the pelvis dilated. She recovered in the course of several weeks, the cavity filling up and closing. At the present time, 20 months after the operation, she is well.

Mr. H., aet. 61, had a mass in the right side for at least two years, possibly longer; he had been losing weight during the past few months; there was no pain, nor haematuria.

Upon examination there was found a large, rather hard tumor in the right lumbar region, not adherent to the abdominal wall, moving a little with respiration; it was not continuous with the liver. The growth extended to the anterior superior spine of the ileum, and beyond the median line. In other words, the growth corresponded in position to the right kidney. There was no free fluid in the abdomen. The urine contained a trace of albumin, no blood. There was nothing else abnormal found upon physical examination.

A diagnosis of tumor of the kidney was made.

Through a right rectus incision the growth was exposed and was found to be a lipoma surrounding the kidney, about 8 x 4



inches in its dimensions. It was shelled out without much difficulty, though in freeing it the kidney was much displaced, and its capsule torn, so it was thought best to remove it with the tumor; it would have been possible to leave the kidney, however.

After the operation he seemed to be getting along pretty well, except that for a couple of days there was almost complete suppression of urine. On the third and fourth days he was passing an abundance of urine. However, on the sixth day his condition became worse and death occurred, apparently from oedema of the lungs.

Doctor Wahl's report upon the examination of the tumor is as follows:

"The tumor is a mixed fibroma and myxoma. Some portions contained scattered fat cells. There is also some infiltration with plasma cells and lymphocytes, with a few pus cells.

"The kidney shows pressure atrophy of the outer part of the cortex. Some interstitial hemorrhage (traumatic). Tubular epithelium swollen and degenerated."

---

**The Localization of Secondary Tumors.**—"Why secondary tumors are so frequently located at points of injury remains to be explained. The fact here concerned has often been noted," says *The Journal of the American Medical Association*. "Recent observations by Jones and Rous at the Rockefeller Institute for Medical Research shows that in mice an acute injury caused mechanically to the peritoneum renders it more suitable for the lodgment and growth of mouse tumor. The injury caused, for example, by a smooth glass rod where it lies in contact with the peritoneum develops a condition favorable to tumor implantation. Evidently the resistance manifested by a healthy peritoneum to the lodgment and growth of tumor fragments is not due to a general immunity reaction, but is referable to the physical characters of the lining membrane; for the local injury renders susceptible the part of the peritoneum immediately affected and that part only. Jones and Rous remark that a connective tissue highly cellular and perhaps still proliferating as the result of injury may well elaborate the stroma for a tumor more rapidly than normal connective tissue. In support of this idea they cite the fact that connective tissue reacting to an injury grows profusely and almost immediately when incubated in plasma, whereas normal tissue from the same region shows usually no growth whatever. The New York investigators summarize their observations with the statement that the secondary location of tumors at points of injury may be attributed with good reason to the presence at such points of an active connective tissue capable of elaborating a stroma rapidly and abundantly, for it is the proliferation of the subendothelial connective tissue to form a supporting stroma that determines the fate of free tumor cells, whether these lie on the peritoneum or within a vessel."

**VENTRAL HERNIA \***

By F. E. BUNTS, M. D., F. A. C. S., Cleveland

Ventral hernia is a comprehensive name signifying a hernia occurring at some point on the anterior abdominal wall and may be either congenital, acquired or traumatic. Probably all of the acquired forms might better be classified either under the head of congenital or traumatic herniae.

The well-known forms of epigastric and umbilical herniae are essentially congenital in their origin, owing to an inherent weakness at the umbilicus or in the linea Alba or linea transversalis.

Wide separation or diastasis of the recti, the result of repeated pregnancies, relaxed abdominal walls, or great increase of intra-abdominal pressure, while not constituting a genuine hernia, may for all practical purposes of relief and treatment be considered as herniae in the linea Alba. While traumatic ventral herniae usually follow operations, yet I have seen two large ventral herniae, one in the right and the other in the left hypochondriac region, developing after stab wounds inflicted in the abdomen of a woman, with a knife. They may also follow other injuries, such as gunshot wounds.

It is unquestionably true that the majority of traumatic ventral herniae are consequent upon drainage either for pus or other cause, and yet a not inconsiderable number are due to errors in technique, resulting in faulty approximation of tissues, or infection of muscular or fascial sutures, or premature absorption or loosening of sutures.

Under the head of faulty technique might also be included faulty primary incisions, those, for instance, which cut across muscles when separation of the fibres would be sufficient, and the failure to take into consideration the nerve supply of the various muscles attacked and the selection of those parts where least harm will be done. This is quite as important a consideration in ventral wounds as in those made for the radical cure of inguinal hernia.

Post-operative herniae following laparotomies for pelvic troubles uncomplicated by infection are not so frequent as formerly, probably due to the avoidance of the linea Alba as a line

---

\*Read before the Northwestern Ohio District Medical Association, Findlay, Ohio.



of approach and the selection of a point to either side of it in preference. Some who still make the primary incision through the *linea Alba* also make an incision into the sheaths of both recti and in approximating the tissues bring the two recti together in the middle line and unite their sheaths above them.

Appendicitis operations in which drainage is unnecessary should practically never be followed by hernia; particularly is this true if the access is gained through the split muscle route suggested by McBurney, and even when drainage is required, if the incision both in the peritoneum as well as the separation of the muscle fibres has been closed tightly about it, and the tube removed in two or three days, hernia will rarely result. But in cases of extensive or prolonged packing and draining, I believe, hernia in some degree will inevitably be the ultimate result.

In the right rectus incision for gallbladder work and where drainage is almost universally practiced, hernia, at least of an extent requiring repair, is extremely rare. However, one of the largest ventral hernia I have ever seen occurred after a right rectus incision in the gallbladder region, due to the fact that the operator extended the incision unusually far downward in order to secure an offending appendix.

Post-operative herniae following operations upon the stomach are very infrequent, and are most likely to follow incisions through the median line, though even then it is extremely rare. Drainage after these operations naturally is rarely resorted to.

Possibly in this class of herniae we might include those following operations upon the kidney and ureter. In our experience these have been rare, but it is reasonable to suppose that the extensive mutilation sometimes necessary in combined operations upon the kidney and ureter will in a fair proportion of cases be followed by hernia, and we have seen a large post-operative hernia following a nephrectomy as well as after a nephropexy.

Epigastric and umbilical hernia are primarily congenital in origin and are only considered in this connection because of the similarity of treatment.

Diastasis of the recti following labor might be considered as traumatic, and their remedy may appropriately be considered here.

The five great factors in the prevention of post-operative herniae are:

1. Proper selection of site of operation.
2. Avoidance of unnecessary or extensive nerve injury.
3. Avoidance of infection.
4. Avoidance so far as possible of drainage.
5. Proper closure of the wound.

The selection of the site of operation is determined so definitely by the lesion to be attacked that but little choice is open to us, but we may limit the extent of it to the smallest possible opening compatible with accurate work in the interior of the abdomen, and by its size and direction aid in accomplishing the second indication, that is, the avoidance of extensive nerve injuries and consequent loss of tone and atrophy of muscular and aponeurotic fibres.

The anterior divisions of the seven lower dorsal nerves taking the name of intercostal nerves, and the iliohypogastric derived from the first lumbar nerve, supply the skin and muscles of the abdominal wall. An examination of their distribution will show how easily their supply may be cut off by careless or illy designed incisions, and also show how to avoid in great measure these fallacies.

In connection with this, it may be permissible to call attention to the too frequent attempt on the part of some operators to do too much through one incision; particularly is this true in operations upon the gallbladder, in which so many enlarge the incision almost indefinitely in order to remove an appendix. This, I believe to be an error, and will result sometimes in enormous herniae. A small additional incision over the appendix and its removal through the split muscle fibres will add little if anything to the time of operation and much to the future strength of the abdominal wall. Sometimes when the McBurney incision has been made it seems almost impossible to gain access to a badly adherent appendix without cutting across the fibres of the oblique muscles, one or both, and I have seen many operators who do not hesitate to do so, but it is easy to get more room by continuing the incision through the sheath of the rectus and avoiding cutting its fibres by pushing them toward the median line. If in any case it becomes absolutely necessary to cut the rectus transversely, then the danger of hernia may be almost totally eliminated by over-lapping the sheath just as is done in the operation for umbilical hernia.



The third indication, avoidance of infection, naturally is of very great importance and every effort should be made to avoid it. In clean cases, that is, where no infected areas are opened up or inflamed or infected organs removed, the occurrence of suppuration must always be of grave concern to the operator, for it goes without saying that it would not have occurred had there been no operation, and consequently the responsibility becomes greater and the resulting herniae the more deplorable. *It is not sufficient that our patients should survive an operation—it is imperative that they should recover from it in the best possible manner, and with no resulting disability that it is in our power to prevent.*

Fourth—Avoidance of drainage has been accomplished in many cases in which it was formerly thought to be unavoidable. A better knowledge of bacteriology, the realization that pus tubes may become practically sterile if we are not in too much of a hurry to operate, and consequently that they will not require drainage in the greater proportion of operations for their removal, and finally the careful approximation about the drainage tube, when used, of the peritoneum and muscles and the overlapping of the muscle sheaths or aponeurosis on both sides of the tube, will prevent hernia in most of these cases.

Fifth—The proper closure of wounds is of vital importance in the prevention of ventral hernia. This embraces the methods of closure as well as the material used for suture.

Whenever possible, the wound should be closed in successive layers accurately but not too tightly approximated. The peritoneum may best be united by careful eversion of its edges held by a running suture of plain catgut, not heavier than Number 1. Muscles should also be united very loosely, just enough to bring the fibres in approximation by interrupted sutures of the same sized plain gut, while the muscle sheath or aponeurosis should be overlapped and held in place by two rows of mattress sutures, using Number 1 chromicised gut. Finer gut than this is used by some, but I am sure it is responsible for a certain number of herniae due to its too early absorption or to its giving way under severe strain, such as vomiting or tossing about in bed.

Of 1,457 recorded cases of hernia operated by my associates, Doctors Crile and Lower, and myself, 240 or 16.4 per cent were for ventral herniae; 166 were in women, and 74 in men. Aside from the umbilical and epigastric herniae, numbering 65,

the largest number, 55, were caused by operation for appendicitis; 14 followed the removal of tubes and ovaries, 9 hysterectomies, 15 gallbladder and kidney operations, and 4 from previous heriotomies. The remainder were caused by agencies distributed over a wide range, including accidents, stab-wounds, pregnancies, strains, et cetera.

Looking over the immediate results of these 240 operations for ventral herniae, I find 7 or 2.9 per cent resulted in death, 4 not improved and 2 doubtful. One death was caused by pneumonia, one by apoplexy, one sepsis and four not recorded. The great preponderance of cases in women is striking, but is easily explained by the great number of umbilical hernia and operations upon pelvic diseases, as well as by the effects of pregnancy.

The fact that 55, or over 22 per cent, of all these ventral herniae were due to operations for appendicitis is a striking arraignment of delayed operations in this class of cases, for with almost no exception the herniae followed pus cases where drainage had been instituted. It is a serious matter for the physician to consider when he is trying to tide a case of appendicitis over to an interval operation or to no operation at all. He must realize that when properly performed through a split muscle route and on an unruptured or nonsuppurating appendix, hernia does not result, and that an operation for repair of a hernia following a drainage case subjects the patient to a risk quite as great or greater than an operation upon an unruptured appendix.

The size of these post-operative herniae vary from one as large as a hazel-nut to one containing a large part of the abdominal viscera. The amount of scar formation at the point of drainage seems to determine to a great extent the size of the hernia, and though this may be firmly resistant at first to pressure from within, it is certain to stretch as time goes on, and it may always be taken for granted that the peritoneum and skin offer practically no obstacle to the rapid formation of a hernia, and next in order of inefficiency comes scar tissue.

So far as prognosis in unoperated cases is concerned, we have seen no fatal case result except when the bowel had become intimately and extensively adherent to the overlying scar and obstruction resulted, but they do constitute a very serious disability, and much pain and inconvenience often results. In one of my own cases I found a floating kidney persistently slip-



ping down into a hernia following an appendiceal operation, and when in this position, any exertion requiring contraction of the oblique muscles caused very decided renal pain.

As a palliative measure, belts and pads may be used, but the results of operations are so excellent that it does not seem proper to advise a patient to remain throughout life in a condition of semi-invalidism.

Pads have been especially recommended in epigastric and umbilical herniae, but as the former are rarely reducible and give rise in such a large proportion of cases to digestive disturbances and stomach symptoms, they should either be operated upon, if producing symptoms, or let alone if irreducible and quiescent.

Umbilical herniae can be so readily and permanently cured by radical operation, and are so inherently dangerous to life if allowed to continue in their development, that some very strong individual reason must be advanced for not advising and even urging operation. The mere question of excessive adiposity, which is almost universally present in these cases, should not act as a deterrent, for the removal of a sufficiently large conical portion of fat along with the sac leaves the real operative field perfectly clear and readily accessible.

### Operative Treatment

Operations for ventral herniae must necessarily vary with their location, but the general principles which prevail are: 1st, The removal of all the pre-existing scar tissue, which is best effected by elliptical incisions extending some distance on either side of the site of the hernia and scar tissue, which at the same time allows one to enter the peritoneal cavity at a safe point free from adhesions, and then, after removal of all or most of the sac, the separation of the tissues into their various layers and their approximation by layer sutures just as in a fresh incision. Sometimes this is not possible owing to too extensive scar formation or to the atrophy of the muscular layers of the abdominal wall leaving only scar tissue and muscle sheath or aponeurosis. In such cases practically equally good results may be obtained by clearing away the sac, trimming the edges of the hernial ring, slitting the ends a little if necessary and over-lapping the entire thickness of the wall, just as in the Mayo operation for umbilical hernia. The amount of over-lapping must be determined by the amount of tension, for it is undoubtedly true that if the tension be too

great no amount of suturing is going to prevent its ultimately giving away. But a moderate amount may be endured when assisted by proper adhesive plaster support and bandaging of the abdomen.

In presenting this paper I have not sought to bring out new facts or develop new principles, but it has rather been my aim to call attention to the relative frequency of ventral herniae, the principal causes operative in their production, the disability occasioned by them, and the means by which they can be cured and the patient relieved of semi-invalidism and restored to a condition which will allow him to enjoy life once more, free from annoyance and danger.

1021 *Prospect Avenue.*

---

**The Health of Our Summer Resorts.**—Many of our summer resorts have acted on the policy that a good climate, charm of location and beauty of scenery are sufficient inducements to attract the summer visitor; but nowadays people are more wary and wisely look for more than this before selecting a vacation playground. The visitor wants a clean bill of health from the resort he has chosen, and is entitled to have one. Vacation typhoid is becoming known as a serious hazard. The prudent recreation seeker now finds out in advance whether or not this infection prevails at the place he has in mind, and furthermore learns what sanitary measures are being taken there to safeguard the health of the summer colony. The town of York, Maine, has recently taken steps that at once place it in the forefront of progress as far as health is concerned. The way the problem was met may well serve as a model for other summer resorts. Last year there were a number of cases of typhoid fever at York. No attempt was made to conceal the fact of the existence of the disease and its extent. The authorities very properly felt that the way to meet any danger was to face it in the open. An expert was invited to come to York and make a sanitary survey. The chief recommendation of the expert was that York needed a full time health officer. The town appropriated \$2,500 a year for this purpose and appointed Mr. William Eustis Brown, a graduate of the School for Health Officers of Harvard-Technology, to the newly created position. The town of York is now spending one dollar per capita per year for health, a larger sum than is appropriated by any other American city directly for like purpose. "Public health is purchaseable," the price is moderate, and York shows by its action that it intends to enjoy the best attainable protection from disease. Other summer colonies will find it to their advantage to follow the example of York, and take the necessary measures to safeguard their citizens and the strangers within their gates. People are now advised to demand the security of health that only a well-ordered sanitary department can furnish. Our seashore and mountain resorts can no longer depend on nature and luck for a clean bill of health.—*J. A. M. A.*



## REMARKS ON DIGITALIS \*

By WILLIAM G. ALPERS, Sc. D.

Dean of the Cleveland School of Pharmacy, Western Reserve University,  
Cleveland, Ohio

The well-known abundance of contributions to the literature of Digitalis seems to make further additions unnecessary, if not superfluous, and the only excuse for this paper is the fact that it has almost become impossible to follow and read all that is written and said, so that a short review or digest might be welcome. This volume of literature on Digitalis can be understood if I state that one firm, Hoffmann-La Roche, have compiled 462 different original papers on their product, "Digalen," and the number of articles written on every other real, or supposed, constituent of the plant is nearly equal to this figure. It is, therefore, not my intention to present the results of new physiological tests, which would probably meet with the same skepticism as all others, nor to enter into a discussion of the various active principles of the plant, for the next investigator would probably again upset my researches and claim infallibility for his own. What Ferrier said years ago in his Medical History is to a great extent true today, namely:

"If any person were inclined to write a satire on medical evidence, the different testimonies respecting the properties of this single plant would furnish abundant materials. 'It is a diuretic,' says one physician. 'It has no diuretic power,' says another. 'It is a stimulant,' says a third. 'It is a sedative,' cries another. 'It has no properties at all,' exclaims a fifth."

The history of this interesting plant is surrounded by as many doubts and clouds as its chemistry and physiology. All textbooks agree on the one statement, that Fuchs (Fuchsius), a German physician and botanist, originated the name Digitalis, taking this word from the German name "Fingerhut" (thimble), by which name this plant is still today known in Germany. As to the origin of the English name, a number of versions exist. Fluckinger in his Pharmacographia states that fox-glove is said to be derived from the Anglo-Saxon "Foxes-Glew," meaning fox music, in allusion to an ancient musical instrument consisting of bells hung on an arched support. He quotes no authority for this statement, which cannot be found anywhere else.

\*Read before the Pharmaceutical Section of the Cleveland Academy of Medicine, January 29, 1915.

Britton & Brown, in their "Illustrated Flora," state that Foxglove is a corruption of Folk's glove, folks being an Anglo-Saxon word for fairy. They also state that there are sixty different names in English for this plant, some of them being: Fairy fingers, dog's finger, bloody finger, red finger, lady's finger, finger flower, thimbles, fairy thimbles, lady's thimble, fairy cap, foxes-glove, lady's glove, elves glove, fairy glove, fairy bell, dead man's bell, fairy weed, popdock, flapdock, rabbit's flower, lion's mouth, throatwort, wild mercury, Scotch mercury. In French we also find the name: Doigtier, Doigt de la Vierge, Gant de Notre Dame.

The preponderance of the word fairy in these various names gives strength to the supposition that folks' (or fairy) was originally the first part of the word fox-glove, while the equal preponderance of finger and thimble seems to contradict Fluckinger's statement as to music. Skeat's Etymological Dictionary also states: "Fox-glove, Anglo-Saxon foxes glofa, fox glove, a fanciful name." Lloyd, in his "Treatise on Digitalis," says: Rayser (chemist and druggist) is authority for the statement that the term "Foxes glofe" occurs in the Saxon Herbarium, 1000 A. D., and again, under the name *Cerotheca vulpis*, in a manuscript of the fourteenth century titled *Simonama Bartholimei*. Rayer's statement can be verified from a book titled "Leechdoms, Wortcunning and Starcraft of early English, by Rev. Oswald Cookayne, London, 1864." This book is a collection of documents, for the most part never before printed, illustrating the history of science in England before the Norman conquest. The book is printed in Anglo-Saxon type on the left side pages and the English translation is opposite on the right side. On page 55 we read:

The herb *Strychnos manikos*, that is foxglove, is used

1st. For erysipelas.

2nd. For a pimply body.

3rd. For sore of head, and heat of the maw and for chur-nels.

4th. For sores of ears.

And again on page 267:

"Foxglove: 1st. For inflammatory sores take leaves of this root, which is named *Strychnos manikos*, and by another name foxglove, work to a poultice, lay on the sore, it will give relief.



"2nd. For a pimply body, which the Greeks name Herpes, take this same root which we named Strychnos manikos, and fine flour, work to a poultice, lay it on the sore, it will be healed."

To this translation the following footnote is added:

"Strychnos manikos is Solanum insanum, not an English plant, and certainly not foxglove. The Leechdoms here recorded seem derived from what Dioskorides says of the Strychnos Kaepaios, namely: The leaves will make poultices for erysipelas and herpes and headache and sore stomach and toothache."

This is probably the first mention of foxglove, showing that the Anglo-Saxons recognized its medicinal value and used it extensively. Herzfeld, in a recent paper, "Remarks on the use of Digitalis," quotes from an herb book of the botanist, Doctor Hieronymus Bock, published in 1551, showing that foxglove was used as a drug at that time.

Another quotation of interest is from a book titled: THE HERBALL OR GENERAL HISTORIC OF PLANTS, gathered by John Gerarde of London, Master in Chirvrgerie, 1597. Very Much Enlarged and Amended by Thomas Johnson, Citizen and Apothecary London 1636.

On page 789 we read:

"The foxgloves in that they are bitter, are hot and dry, with a certain kind of clensing qualitie joyned therewith; yet are they of no use, neither have they any place among the medicines, according to the Antients. Foxglove boiled in water or wine, and drunken, does cut and consume the thick toughness of gross and slimie flegme and naughty humours, it opens also the stopping of liver, spleen, and milt, and of other inward parts. The same taken in like manner, or boiled with honied water or sugar, does scour and clean the brest, ripen and bring forth tough and clammie flegme. They serve for the same purposes whereunto Gentian does tend, and has been used instead thereof, as Galen saith."

The following foot note is added:

"Where or by what name Galen either mentions or affirms this which our Author cites for him, I must confess I am ignorant. But I probably conjecture that our Author would have said Fuchsius: for I only find him to have these words set down by our Author, in the end of his Chapter of Digitalis."

It appears from this footnote that the confusion about the various names and properties of this plant dates back to the old writers. According to Pfluckiger:

"The Welsh 'Physicians of Myddvai' appear to have frequently made use of foxglove for the preparation of external medicines. Fuchs and Tragus figured the plant: the former gave it the name of *Digitalis*, remarking that up to the time at which he wrote, there was none for the plant in either Greek or Latin. At that period it was regarded as a violent medicine. Parkinson recommended it in 1640 in the 'Theatrum botanicum,' and it had a place in the London Pharmacopoeia of 1650 and in several subsequent editions."

In 1783 *Digitalis* was made official in the Edinburgh Pharmacopoeia, on the recommendation of Doctor Hope. Its introduction into modern practice is, however, chiefly due to Withering, a well-known English botanist and physician, who as the first investigated its therapeutic powers.

The old historical dates of *Digitalis*, therefore, may be compiled as follows:

- 100 A. D. Dioscorides mentions the plant under the name of Manikos Kaepaios. (Cockayne, Leechdoms, Wortcunning and Starcraft.)
- 800-1066 The Anglo-Saxon used the plant under the name of either Folks-Glofa or Foxes-Glofa, probably Folks-Glofa, meaning Fairy's Glove (or Thimble). (Cockayne, Leechdoms, etc.)
- 1200-1500 The Welsh Physicians of Myddvai probably used the plant for external application. (Fluckiger, Pharmacographia.)
- 1550 (or thereabouts) Fuchsius gave it the name of *Digitalis*.
- 1551 The plant is known and used in Germany. (Herzfeld, Hieronyonus Bock.)
- 1597 The plant is used in England externally and internally. (Gerarde, The Herball of Plantes.)
- 1640 Parkinson mentions the plant in *Theatrum Botanicum*.
- 1650 *Digitalis* becomes official in the London Pharmacopoeia.
- 1780 Withering examines the medicinal properties of *Digitalis*.
- 1783 *Digitalis* is official in the Edinburgh Pharmacopoeia.



It is probable that mention of the plant, possibly under different names, is made in German and Latin manuscripts of the Middle Ages.

It is generally stated in textbooks and also in the U. St. and other Pharmacopoeias that the *Digitalis* leaves of the second year's growth are preferable to those of other years, and that the cultivated ones are inferior to the wild ones. Recent observations do not seem to support this statement. F. H. Carr, in the *Am. J. of Ph.*, states that the first and second years' growth have proved identical in their activity, and the cultivated leaves are at least as active as those wild grown. Hatcher, who in his "Text-book of Materia Medica, by Hatcher & Sollmann" indorses the preference of the second year's growth, has since, in a recent article (*Drugs Circ.*, 1914), claimed equal value for first and second years' leaves, as well as for cultivated leaves in comparison with wild ones. Lloyd's observation also confirm this view and he attributes the erroneous statement about the second year to the fact that formerly also the root was used, which in the first year is insignificant and sappy, while the second year's root is larger and heavier and more pronounced in quality. There may be another reason, however, for adhering so long to the second year's leaves as better. The statement in the textbooks is followed by the other one, "gathered at the commencement of flowering." Now, *digitalis* does not flower till the second year, and leaves could not be gathered in the first year at the commencement of flowering. As the flowers were also used formerly, and are used today in Japan, it can be understood how the statement of the second year's growth originated, flowers and leaves being gathered at the same time. According to the best investigators, this statement should therefore be changed to "leaves of the first or second year's growth should be used."

Professor Hivohashi, of the University of Tokio, Japan, who made extensive investigations in *digitalis*, states (*Apoth. Zg.*, 1913, V. 28, p. 9) that *digitalis* flowers probably contain more of the active constituents than do the leaves, and the buds are more active than are the expanded flowers.

As to the preservation of the gathered leaves, all kinds of more or less complicated directions are given in the various pharmacopoeias. According to recent literature, however, fox-glove leaves do not differ materially from most other vegetable

drugs; that is, they will deteriorate if kept carelessly, and keep almost indefinitely if properly stored in air-tight containers in dark places. The changes that do undoubtedly happen, take place in the time between gathering and marketing, according to the manner in which the drying is done.

There are four pharmaceutical preparations of *digitalis* official in our pharmacopoeia, viz.: The extract, the fluid-extract, the tincture and the infusion, of which the first one is but rarely and the second one not often used. According to all authorities, the tincture and infusion are the two most reliable preparations, but there is a vast difference of opinion as to the relative value of the two. Herzfeld states that:

"I believe that in this country the tincture is the least reliable of all preparations of *digitalis*, particularly since, for the sake of convenience, it is frequently prepared by diluting the fluid extract, which in itself may be inferior."

Other authorities also dwell on the improper preparation of tinctures from fluid extracts. It is well worth while to stop a minute to investigate this charge. I myself have in former years, when physicians made this remark, asked them how many pharmacists, to their positive knowledge, made their tinctures from fluidextracts. Generally the answer was: "Well, of course, I do not know, but conclude from the fact that sometimes tinctures do not produce the desired effect, that they are made improperly." And when I replied: "Doctor, are you sure that in such cases you always ordered the right medicine?" the answer would be: "Of course I did; I diagnosed the case myself." In other words, whenever the patient does not respond to the treatment, the fault lies with the pharmacist but not with the physician. The unbiased observer will say, if men are apt to make mistakes there will be as many mistakes made by physicians in diagnosing as by pharmacists in dispensing. I personally do not believe that the practice of making tincture from fluidextract is general; it may prevail among lazy and indifferent druggists, who hardly have any prescription trade for this very reason.

Coming back to our subject, there is besides Doctor Herzfeld no other authority to reject the tincture. As a rule the tincture is preferred to the infusion as far as reliability is concerned, and whenever the full cardiac effect of *digitalis* is required. As a diuretic, in cases of faulty circulation of blood



through the kidneys, the infusion is preferred by probably 95 per cent of all practitioners. An exception is Doctor R. A. Hatcher, who in a recent paper states that:

“As a matter of fact, a properly made infusion, as well as the tincture, contains all of the therapeutic active principles of digitalis.”

He tries to prove this statement by saying that the marc left after making the tincture is inert, and if an infusion be made with this marc and tested on a frog, the truth of this statement becomes apparent. It is to be regretted that he did not also examine the marc left after making the infusion. Later on, in the same article, he says:

“An infusion from a fluidextract might be unsightly, but it would probably be more active than the official infusion which one would obtain from the nearest pharmacy. This practice is distinctly not advocated, but pharmacists should understand the fact.”

We ask: Why not advocate it if it makes a better infusion? And if the tincture and infusion are of equal value, why not make the infusion from the tincture, or why not delete one or the other?

In direct contradiction to Hatcher's results we will cite Herzfeld:

“According to the methods of Keller-Fromme, no digitoxin or digitalin could be detected in an infusion prepared according to the U. S. Ph., while in an infusion, made after my method, as high as 0.02086 per cent digitoxin could be found.”

Doctor Herzfeld's method is as follows: The leaves are finely broken up and freed from the stems and ribs. They are then covered with the entire quantity of boiling water and allowed to digest upon the water-bath at 50° C. for one hour. When cooled down to about 32° C. an amount of alcohol corresponding to 10 per cent of the finished infusion is added and the whole permitted to stand for 12 hours. The resulting product is then filtered, the leaves expressed and the necessary amount of water added to restore the volume. Later on he says that this “infusion” (it is rather a weak tincture) should always be prepared fresh. This would compel the patient to wait about 14 hours for his medicine, a rather long wait for cardiac patients.

In an editorial of the *American Druggist*, 1913, V. 16, p. 12, the statement is made that:

"According to Henry Beates, not one physician in ten can tell the difference in the effect produced by an infusion of digitalis made from a fluidextract and that produced by one made from the assayed leaf."

This may be interpreted that physicians are not able to tell the effect of their medicine, or that Doctor Hatcher's statement of infusions made from fluidextract is correct.

As to the reliability of the fluidextract itself, we quote J. D. Riedel:

"Fluid extract of digitalis U. S. P. viii was found to vary in specific gravity from 0.945 to 0.991, and in extract content from 10.30 to 17.41 per cent."

And Puckner, *Jour. Amer. Med. Assn.*, 1913, claims:

"Examination of 20 samples of fluidextract of digitalis confirmed the generally-held belief that commercial digitalis preparations vary most widely. The most active were found to be nearly four times as active as the weakest."

Against this statement protests were afterwards printed in a number of pharmaceutical publications.

In the coming pharmacopoeia the formula for the infusion of Digitalis will remain the same, while the alcohol in the tincture will be increased to 60 per cent and the fluidextract to 70 per cent. It is clear that this large amount of alcohol is necessary to preserve the preparation.

I regret that the formula for the infusion will remain unchanged. It is now made with boiling water and 10 per cent of alcohol is added after straining. For what purpose is the alcohol added? The properly prepared infusion without alcohol will keep long enough to be taken, and for a longer preservation the amount of alcohol is inadequate. The alcohol should be omitted and the remark:

"To be freshly prepared, when wanted."

added to the formula. As it stands now, the presence of alcohol misleads many thoughtless pharmacists to think that the infusion may be kept in stock.

Prolonged medication with tincture of digitalis often produces nausea and other untoward effects. It is stated that a certain fat or fixed oil present in the leaves is the cause. As this substance is soluble in petroleum benzin, the leaves can be freed from it by subjecting them to the action of benzin before



making the tincture. The general verdict of the medical profession is in favor of this fat-free tincture, although Hatcher and others deny its preference.

According to Hatcher's experiment, isolated fat from digitalis proved harmless. This probably is true, but would be no proof that even a small amount of this fat in the presence of various alkaloids may not influence their action.

As to the source of the best leaves of foxglove, not much literature is available. It is stated that the plant grows in England, Middle Europe and also in America, and here and there the timid statement is made that soil containing iron is best adapted for its growth. According to Gehe (*Handesberichte*, 1913, p. 84) :

"Digitalis is found generally on soil containing iron and manganese and does not occur in Switzerland on this account. It is assumed that manganese is essential for the life of digitalis."

In contradiction of this, Hatcher says :

"Another curious misconception regarding digitalis which is hard to explain is that the leaf grown in certain regions is more active than that grown in other localities."

This is probably the most remarkable statement in Hatcher's excellent paper. Whosoever has paid attention to the development of agricultural chemistry, the introduction and first results of which have made Liebig immortal, would rather say : "It would be hard to explain if the leaf grown in certain regions were not more or less active than that grown in other localities." I do not think that a plant of powerful and characteristic properties is known that does not change its nature, nor produce its constituents in a larger or smaller quantity when transplanted to a new soil. Every farmer in France and Germany knows that the same potato planted in a marshy soil will produce a different tuber than when planted in a sandy soil. Grapevines brought from the Rhine or Garonne to California will flower and bring fruit, but the grape differs in flavor and amount of alcohol produced. The same vine even differs in different parts of California. Many European aromatic flowers, like Chamomile, Mullein and others, grow abundantly in America, but lack the ingredients that make them valuable; and they even differ in aromatic properties in different parts of the home country. Why should Digitalis be an exception of this general rule? Doctor Thoma, of the Pharmaceutical Institute of Berlin, one of the best

and most careful pharmacologists living, states in the last volume of the *Arbeiten aus dem Pharmazeutischen Institut*," 1914, p. 202, speaking of the difficulties of cultivating certain medicinal plants:

"How important, for instance, it would be, to have *Digitalis*, which in different parts of Germany is subject to such extraordinary variations in respect to its active principles, under proper scientific cultivation and discover the conditions which for the growth and production of the active principles of *Digitalis* are most favorable."

The chemistry of digitalis is still more confused than its pharmacy, and so far every new assayer has discovered—or claims to have discovered—new principles of various nature. The number of so-called active constituents of the plant is growing daily. Merck & Co., in their annual report of 1911, mention 92 different articles with their discoverers and properties, and the number has been increased considerably since then. Many of these are identical and a good many are mentioned only in the papers published by their authors, but were never isolated or brought in the market. Among these many names four stand out prominently, namely, Digitalin, Digitonin, Digitoxin, and Digitalin.

The oldest one of these, Digitalin-Nativelle, was isolated by the French chemist Nativelle, who claimed it to be a pure substance, while Schmiedeberg, who made an extensive examination of the plant, pronounces Nativelle's Digitalin a mixture of several substances, and gave the name Digitalin to another chemically uniform, amorphous body for which he presented a formula. Another Digitalin was isolated by Kiliani, another by Homolle-Queveune, another by Lancelot, another by Lebourdais, and so on. In Merck's list the name of Digitalin appears 37 times, each time denoting a different article. No wonder that a confusion prevails and that prescribers and dispensers are at a loss what is meant by digitalin. It is not the object of this paper to enter into the merits of these numerous glucosides for each of which the discoverer or manufacturer claims a certain superiority over others. But in view of these different results obtained by men of great learning, long experience and renowned ability, we are led to the question if there is not a reason for this disagreement and if perhaps some fundamental facts or principles have been overlooked.



Now, in trying to bring the various results into some classification, we notice that nearly all agree on the fact that some of the products are soluble in water, some insoluble in water but soluble in alcohol. Kiliani states that Digitoxin is insoluble in water, Hatcher makes the same statement, while Cloetta separated a soluble Digitoxin to which the name of Digalen was given. It is further stated that while Digitoxin is insoluble in water, it becomes soluble in water, best in hot water, in the presence of a certain Saponin that is also present and which, according to some authorities, is identical with digitalein, according to others with digitonin. The presence of a Saponin is also claimed by a number of other investigators, but by no means by all. It is on this basis that Hatcher makes the claim that the infusion contains all the active ingredients of Digitalis held in solution by saponin. He therefore supposes that no change takes place when the infusion cools, although every druggist knows that a slight precipitate forms, and he also must suppose that this saponin and the insoluble digitoxin are present always in the right proportion, that is, enough saponin to dissolve the digitoxin. As a matter of fact, however, the presence of saponin is still in doubt, and even those who claim its presence do not agree on the quantity, some speaking of a trace only. But nearly all investigators agree on the instability of the various digitalis preparations and the ease with which the one is changed into the other. Some doubt the presence of any pre-existing digitoxin in the plant, believing that it forms, after the leaves are gathered, through the influence of this saponin. We are reminded of bitter almonds, where the amygdalin, through the action of a ferment, is changed into benzaldehyde, hydrocyanic acid and glucose. Might there not be a similar cause in digitalis that would account for the evasiveness of the various chemicals? It cannot be doubted that a soil containing iron and manganese is most favorable to the development of the plant, and if the claim that manganese is necessary for the production of digitoxin is correct, what hinders us to suspect a certain relationship between manganese and this complex body? To the adherer of the infallibility of the theory of elements such a thought may appear like the outgrowth of a disordered imagination. But other apparently impossible theories have been proved to be founded on facts, and a chemical genius may come some day and upset many of our pet theories. The

inadequacy of the chemistry of digitalis should certainly lead the investigators to consider the plant as a harmonious total, and not take out its chemistry as a part that can be studied and understood without reference to its whole life and development and productions.

It would be wrong to write a review of digitalis without mentioning the physiological tests to which this plant has been subjected in the last two decades. Here the same confusion reigns as in its chemistry. Naturally so. How can we successfully test a chemical before we have absolute knowledge of its properties? Frogs, mice, rabbits, dogs, cats, have been used to establish what is called a standard. But no two investigators agree. These physiological tests are beyond the scope of the pharmacist and physician, as they require especially arranged biological laboratories that cannot be established without considerable expense. In the same way the physiological chemist requires special training and long experience. Consequently these laboratories are as a rule constructed by large manufacturing houses who employ the best talent that they can find. It is natural that these men work in the interest of the firm that employs them and that their researches always confirm the superiority of the preparation that their employers prepare. This is no adverse criticism of their activity. The commercial houses that go to the expense of establishing and maintaining such laboratories try without doubt to produce the best articles in every line, and as each and every digitalis preparation has some advantages and characteristics of its own, it is but natural that these advantages are exploited in preference to others. But science gains but little by these efforts, and the skepticism that many entertain in reference to biological tests is justified. This became evident some years ago in New York, when the representatives of a large German manufacturing house undertook a crusade against the sins of certain druggists, as stated, in reality, however, to push and advertise a certain proprietary article. Numerous prescriptions were written by their physicians and then analyzed by chemists of repute, and incidentally a result was obtained that was not looked for. Among the prescriptions were a number for tincture of digitalis. The dispensed articles were sent to a biologist of good name, who conducted the physiological laboratory of a manufacturing house. He tested them *secundum artem*, without prejudice, and his report was published.



It now happened that some of the samples had come from his own house, had been tested by him and a certificate as to the strength had been attached to the containers. In his report he declared some of these same tinctures worthless, others too strong. Guaranteed assayed tinctures from other firms shared the same fate. No greater discredit could have been thrown on biological assaying by its worst enemy than by these careful, conscientious examinations. When they were introduced into the Pharmacopoeia it was stated that they were needed on account of the inadequacy of the chemical test; but far from solving the problem, they have only added to the confusion and uncertainty.

Before closing I wish to refer again to Thoms' *Arbeiten aus dem Pharmazentischen Institut*. On page 204 L. Rosenthaler is quoted as follows:

"I am of the opinion that plants produce some of their constituents as a protective weapon against vegetable or animal attacks; but as their enemies do not always have the same geographical distribution as the plants themselves, these protective principles are not needed where the respective enemies are lacking, and consequently are not produced. This supposition explains the fact that the amount of digitalin of cultivated digitalis is less than that of the wild grown plants."

This is not a new theory. It has been shown that the cinchona tree produces quinine as a protective against the attacks of certain insects and bacteria, and whenever the tree is transplanted to countries where it is not attacked by these enemies, the production of quinine gradually decreases. I also refer to Doctor R. C. Eccles' paper on Pharmaceutical Bacteriology in the Proceedings of the Am. Ph. Asso., 1894.

Many other instances of self-protection of plants against surrounding enemies, be they of vegetable or animal nature, or conditions of the atmosphere, could be mentioned. Here, then, is an unexplored field. We generally do not grant self-consciousness and individuality to plant organism, but the few observations that we have made seem to indicate that there is in these low organisms far more foresight and judgment in action than we admit. They may not think, but their work and productions could not be more correct and logical if they had been planned by the most highly developed mind. Nobody ever expects to discover the thoughts of a human being by dissecting his body

after death and analyzing the various parts. Can we expect to explore plant life in its conception and its influence on surrounding nature by dissecting the plant and analyzing what is left after its death?

### Literature

- A. A. Herzfeld, M.D.: Remarks on the Use of Digitalis.  
 R. A. Hatcher: Digitalis and Its Preparations.  
 J. W. Lloyd: A Treatise on Digitalis.  
 Merck & Co.: Digitalis Glucosides and Allied Drugs.  
 Doctor H. Thoms: Arbeiten aus dem Pharmazeutischen Institut, Berlin.  
 Gehe & Co.: Handelsberichte, 1913.  
 Schmiedeberg: Pharmacologie.  
 H. Killiani: A Review of the Chemistry of Digitalis.  
 C. E. Vanderkleed: Proc. Pa. Pharm. Ass'n., 1913.  
 S. Hirahuschi: Yahngakuasshi No. 369.  
*Am. J. Pharm.*: 1913.  
*J. Am. Pharm. Ass'n.*: 1913-14.  
*Am. Druggist*: 1913.  
*Apotheker Zg.*: New York, 1913.  
 W. A. Puckner: *J. Am. Med. Ass'n.*, 1913.  
 O. Cockayne: Leechdoms, Wortcunning and Starkaft, before the Norman Invasion.  
 J. Gerarde: The Herball of General Historic of Plantes, 1597.  
 F. A. Pfluckinger, Pharmacographia.  
 L. W. Rowe: Proc. Am. Ph. Ass'n., 1914.  
 Britton & Brown: Illustrated Flora.  
 E. R. Eccles: *Am. Ph. Ass'n.*, 1894.  
 H. K. Mulford: Pamphlets on Digitalis, etc.  
 Hoffmann-La Roche: *Originalarbeiten*, 1913, 1.

---

**Sputum Reports.**—A. T. Laird, Nopeming, Minn., says that the bare statement in a laboratory report of the presence or absence of tubercle bacilli is not sufficient. We should have some data to know from what part of the respiratory passages it comes. He called attention to this matter in 1909, describing a method of increasing the diagnostic value of sputum reports (*Journal A. M. A.*, Jan. 23, 1909, p. 294), and redetails the method, giving a table showing the character of specimens of sputum as regards the microscopic appearance, cells predominating, and secondary organisms in 2,509 cases at the Adirondack Cottage Sanitarium and the Nopeming Sanatorium. They show that a "mucopurulent sputum containing many pure cells and a few secondary organisms is, in most cases, a 'bronchial' specimen, and if it does not contain tubercle bacilli the doctor may be satisfied that it was a fair test. If the specimens have been coughed up from the lungs, it is not usually much contaminated by mouth or throat secretions. On the other hand, a specimen may to the naked eye be almost equally purulent; but if under the microscope it contains many squamous epithelia cells and numerous secondary organisms, it is more likely to be derived from the throat or nose ('throat' specimen). In catarrhal conditions of the nose and throat such specimens, thick and yellow in appearance, are frequently obtained. Watery and mucoid specimens, like the droplets emitted in ordinary coughing, in which sputum is not raised from the lungs, do not usually contain tubercle bacilli, and the acceptance of reports on such specimens as a basis for excluding a diagnosis of tuberculosis is an injustice to the patient."—*J. A. M. A.*



## EPITHELIOMA OF THE PHARYNGEAL MUCOSA IN A FOWL

By DAVID MARINE, M.D., from the H. K. Cushing Laboratory of Experimental Medicine, Western Reserve University, Cleveland, O.

The comparative incidence of tumors is deemed of sufficient importance to justify recording the following case, which came under my observation incidentally in the course of some work on goitre in fowls.

The fowl—a female white Orpington, serial No. 2372, aged nearly two years—was one of several sent to me by Doctor Chevalier Jackson, of Pittsburgh, Pa.

Upon arrival on February 5, 1915, the fowl weighed 2720 gms. Well nourished. Feathers glossy and normal. Left thyroid lobe palpable, probably the size of a pecan. Breathing through mouth with very definite dyspnoea. Odor of breath was distinctly foul. There is a slight fulness on the left side below the angle of the jaw and including the larynx, and to the touch it appears as a localized hard mass 3 or more cm. in diameter, below and free from the skin. Examination of the mouth showed a large, circular fungoid mass of a pale yellow color rising abruptly from the surrounding mucosa, which was slightly hyperaemic. On cutting into it a piece was easily broken out having a dry, firm, yellowish and necrotic appearance. The general impression gained was that of a chronic infectious granulomatous process, with extensive necrosis, compressing and displacing the larynx. Externally the skin surfaces are everywhere clean.

*February 12.* General condition the same. Microscopic examination of the tissue secured at the time of the first examination shows uniform dry necrosis with extensive cellular infiltration and the outlines of an irregular stroma. The free surface was covered with mucus containing both red corpuscles and leucocytes.

The fowl had considerable difficulty in swallowing, and appeared to be getting weaker.

*February. 20.* Killed by bleeding. Weight, 2,570 gms. Autopsied at once. Thyroids are enlarged; right lobe, weight 1.26 gms., and left lobe, 0.79 gms. Parathyroids are only slightly enlarged, about 3 mm. in diameter. Heart slightly hypertrophied. Ovaries small. Other thoracic and abdominal organs appear normal.

*Mouth and Pharynx.* Projecting from the left lateral wall and roof of the pharynx is a sharply circumscribed tumor-like mass measuring roughly 4 cm. in greatest anterior-posterior diameter, 3 cm. in its greatest transverse diameter, and averaging about 1cm. in thickness. The mass projects anteriorly nearly to the left angle of the mouth. The tongue is quite free, as is also the larynx, which is pushed to the right and rotated so that the glottis opens opposite the cratered, ulcerated center of the tumor. The periphery of the tumor extends under the pharyngeal mucosa, giving the appearance of the normal pharyngeal mucosa, extending a slight distance on to the tumor. It is firmly adherent to the jaw bones on the left side. Externally the subcutaneous tissues are free and normal. No metastases were made out. The general position of the tumor is shown in Fig. 1. No other lesions of the buccal or pharyngeal mucosa were made out.



FIG. 1

Photograph of head with pharynx and mouth opened on right side, showing tumor mass in the centre of the field; (a) glottis; (b) cratered ulcerated centre of the tumor; (c) normal pharyngeal mucosa extending up over the edge of the tumor.



*Microscopic Examination.* Sections taken through the border of the tumor show the mucosa around and extending on to the tumor to be normal. The complete necrosis of the tumor adjoining the mucosa masks the recognition of any possible transitional zone. Practically the entire thickness of the tumor is necrotic. Everywhere on the base of the tumor there is a thin, irregular zone of epithelial tissue arranged in columns and strands of cells invading the entire thickness of the muscular wall of the pharynx and projecting slightly into the loose fascial coat. More anteriorly the bone of the lower jaw is similarly infiltrated. No epithelial pearl formations or prickle cells are made out. Occasionally the invading cell columns have a slightly glandular appearance seen in the so-called basal cell types of epithelioma in man. The line of necrosis is sharply marked by a dense zone of leucocytes associated with slight extravasation of red blood cells. Only the outlines of the irregular stroma can be distinguished in the necrotic part. The general appearance of the invading columns of tumor cells is shown in the accompanying photomicrograph, Fig. 2.

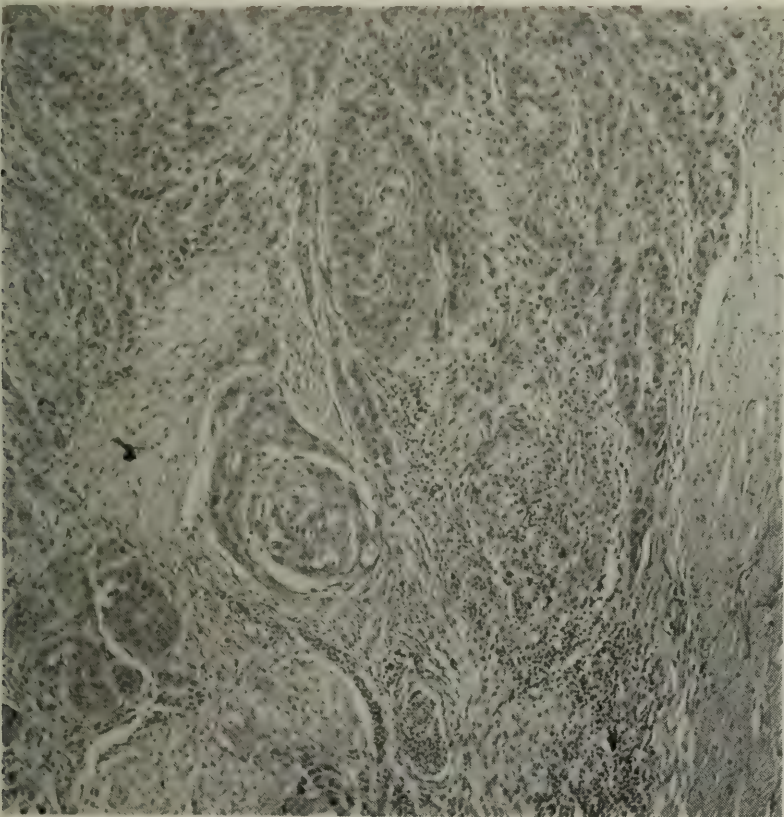


FIG. 2  
Photomicrograph from base of tumor, showing type of cell growth and invasion of the muscular coat of the pharynx. X 100.

Morphologically this tumor is a carcinoma. The possibility of its being an unusual case of the so-called "epithelioma contagiosum of fowls" can be eliminated by the absence of lesions in the usual locations, by the presence of but one lesion, by the absence of the disease from the rest of a large flock, and by the fact that the epithelial changes are very characteristic and different from those of true cancer.

Tumors closely resembling this one as regards location, gross and microscopic appearance, have been reported by L. Pick (1) and Koch (2).

#### References

1. *Berl. klin. Wochschr.*, 1913, XL, 669.
2. *Verhandl. d. Deutschen Ges. f. Pathol.*, 20 Sitzung, S. 136.

---

**Vaccine Therapy.**—The irrational use of stock vaccines for specific infections of any kind is pointed out by H. Greeley, New York, who gives as an illustration Flexner's observation of the inefficiency of non-autogeneous antimeningococcus serum. He does not find them to have the advantage of being cheaper than the autogeneous vaccines, the usual cost of which (in New York) is usually \$5 and which generally can be obtained about as quickly. The patient also would be much better satisfied if he can feel that he is not being treated in a shotgun way, but rather by a method of precision. The object of vaccine therapy is to reinforce the immunizing processes of the body and when these are at their maximum, as in acute fevers, and in some other conditions such as advanced tuberculosis, where such a large amount of partially digested, and therefore especially poisonous bacterial substance is freed from the disease focus so that the tissues are injured and the general resistance lowered at least temporarily, vaccine therapy should not be used. Apart from such conditions, however, "every troublesome or dangerous infection not amenable to specific treatment either medical or surgical should be considered for the immunity raising methods of vaccine therapy." Everything should be done at the same time to improve the general health and particular care be taken to avoid overdose. The special points emphasized by Greeley in vaccine treatment are first, the watch for reaction that should follow the first, second or third dose, to insure having the right vaccine for the case. The first injection should follow a record of the patient's daily temperature range and pulse-rate so one can judge how it is affected by the vaccine. A careful record of this must be kept throughout the treatment. The first dose rarely need be less than 100,000,000 and may be increased by 25 per cent at the end of a week if there is no reaction, or lowering of temperature. After that time, if no reaction, the increase should not be over 10 per cent. A prolonged depression of temperature means deficient reactive power and should be met by a reduction of at least 90 per cent in size of dose and a subsequent increase of not over 10 per cent each time when temperature holds its level. The interval between doses should never be less than a week (perhaps two weeks), to avoid cumulative effects; we must give any increased resistance that may be developed time to act. Greeley recommends changing the site of the injection each time, using both arms and thighs to avoid overstimulation of any single lymphatic chain and produce a general better effect. When the improvement has reached a certain point near a cure, vaccine treatment should be stopped for at least a month or two. —J. A. M. A.



## THE EFFECTS OF CHELIDONIN ON SMOOTH MUSCLES IN INTACT AND SURVIVING ORGANS

By PAUL J. HANZLIK, M. D., Cleveland.

Chelidonin is the alkaloid of *Chelidoneum majus*, which belongs to the Papaveraceae. Its empirical formula as given by Schmidt<sup>1</sup> is  $C_{20}H_{19}NO_{51}$ , and the most soluble salts are the phosphate and sulphate. In 1892, Meyer<sup>2</sup> studied the general or systemic effects of chelidonin and found them to be closely similar to those of morphin, with the important difference that chelidonin produces practically no subsequent irritation of the central nervous system. As yet, however, no studies have been made upon surviving visceral organs.

The present study was undertaken with the idea of ascertaining the effect of chelidonin upon surviving organs and those functions in which the presence of smooth muscle plays an important role. A preliminary report of the results obtained is here briefly presented.

(1) Chelidonin promptly abolishes the spontaneous contractions of the following excised organs: oesophagus, fundus and pylorus of the frog's stomach, intestine of cat and rabbit, and pregnant uterus of guinea pig.

(2) Chelidonin removes the effects of pilocarpin, pituitrin, histamin and barium chlorid upon surviving organs.

(3) The peripheral blood vessels of the frog previously contracted by epinephrin are more rapidly dilated by chelidonin than by Ringer's solution alone. There is very little or no effect upon the untreated vessels.

(4) The constriction of the bronchial musculature by histamin in the surviving lungs of the guinea pig is removed by chelidonin. Bronchoconstriction does not occur with mixtures of histamin and chelidonin. Rabbits previously treated with large doses of chelidonin do not show bronchial spasm with the same doses of histamin as untreated rabbits.

(5) Chelidonin has no demonstrable effect on the pupil of the excised eye of the frog.

(6) In the living rabbit intravenous injection of chelidonin depresses intestinal peristalsis, and large doses remove the stimulant effect of pilocarpin.

(7) It appears that chelidonin exerts its main effects upon smooth muscle.

(8) Therapeutically, chelidinin should prove beneficial in the treatment of such symptoms as asthma, colic and various other enteralgias and gastralgias, and particularly in pediatric practice.

The details of the experiments will be published in the *Journal of Pharmacology and Experimental Therapeutics*.

1. Schmidt, E. Mittl. aus d. pharmaceut. Inst., Univ. Marburg, 1888, 5:15.
  2. Meyer, H. H.: Arch. exp. Path. Pharm., 1892, 29:397.
- 

**Cod Liver Oil.**—The therapeutic value of the preparations of cod liver oil which are on the market has been tested by J. P. Street, New Haven, Conn., who gives his findings. The products tested are Hagee's Cordial, Vinol, Wampole's Extract and Waterbury's Compound, these representing an extract with hypophosphites together with alkalies and strychnin, and one with malt extract and hypophosphites without alkalies. The composition of these preparations is given as found by analysis. The alcohol content ranged from 7.50 to 18.69 per cent. Salicylates were present in all but Wampole's and saccharin was used in the Hagee's cordial. The feeding experiments were made on albino rats, the rations being carefully estimated. Tabulated statements of the results with each preparation are given and the results of the experiments are summarized as follows: Hagee's Cordial failed to sustain rats during periods of seven and fourteen days, the rats showing a loss of weight of 32.6 gm., instead of the normal gain of 24 gm. Vinol in two cases sustained and in two cases failed to sustain growth during periods of from eleven to thirty-five days, the net loss in weight being 1.5 gm. Wampole's Preparation in three cases sustained and in one case promoted growth during periods of eighteen and thirty-nine days, showing, however, only 51.4 gm. gain in weight instead of the normal 83 gm. Waterbury's Compound in two cases sustained and in one case failed during the periods of thirteen and thirty days, the net gain in weight, however, being but 0.3 gm. instead of the normal 32 gm. Cod liver oil showed a gain of 42.4 gm. over the normal, while with the same rats Hagee's cordial showed a loss of 60.2 gm. Cod liver oil showed a gain of 45.5 gm. over the normal as against the loss of 43.5 with Vinol; a gain of 19.5 gm. over the normal against a loss of 31.6 gm. with Wampole's Preparation, and in the same rats, a net loss of 31.7 gm. with Waterbury's Compound. "Not only did cod liver oil show a marked superiority as a source of nutriment over Hagee's Cordial, Vinol, Wampole's Preparation and Waterbury's Compound, but it also showed a remarkable reconstructive and recuperative power in its ability to enable rats to gain weight rapidly and steadily after having suffered from a deficiency in nutriment when fed with the four preparations named above."—*J. A. M. A.*



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902.

Capital Stock, \$6,000

---

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH F. STONE  
2318 PROSPECT AVENUE

## ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.  
ROGER G. PERKINS, M. D.

JOHN PHILLIPS, M. B.  
T. WINGATE TODD, F. R. C. S.

## COLLABORATORS

C. E. FORD, M. D.  
H. E. HANDERSON, M. D.  
S. W. KELLY, M. D.  
J. J. R. MACLEOD, M. D.

DAVID MARINE, M. D.  
V. C. ROWLAND, M. D.  
H. L. SANFORD, M. D.  
TORALD SOLLMANN, M. D.

G. N. STEWART, M. D.

---

## EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.  
*Vice-President*, C. E. BRIGGS, M. D.

*Secretary*, C. A. HAMANN, M. D.  
*Treasurer*, H. G. SHERMAN, M. D.

---

## BOARD OF DIRECTORS

C. E. BRIGGS, M. D.  
F. E. BUNTS, M. D.  
G. W. CRILE, M. D.

C. A. HAMANN, M. D.  
C. F. HOOVER, M. D.  
S. H. LARGE, M. D.  
J. B. MCGEE, M. D.

J. P. SAWYER, M. D.  
H. G. SHERMAN, M. D.  
W. H. WEIR, M. D.

---

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

---

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

---

## EDITORIAL

---

Dudley Peter Allen

---

In the death of Doctor Allen this community has indeed suffered a great loss; but not this community alone.

Ideals are the expression of the progress of man toward God. To inherit ideals is a divine birthright; to acquire ideals is a

supreme accomplishment; to preserve ideals is an abiding faith; to inspire ideals is to give Life; to vitalize ideals is the great Duty; to bequeath ideals is a magnificent legacy.

These were the preachments of the life of this man. These were the abiding influences in his existence. Such evidences marked his contact with the world. Here was a convincing belief in the actuality of right, not a mere philosophical abstraction; here was a conspicuous regard for obligation in every form; here was a profound respect for truth which marks the great teacher; here, also, was a fine esthetic sensibility which deepens human sympathy.

Through his work in this community these qualities developed relationships of abiding value. In all his activities there was penetrating intuition, broad sagacity, forceful enthusiasm, refined gentility. In his profession he was a commanding influence; it was marked by a perfected preparation, a sustained interest, a noble devotion to which daily witness was found in "the short and simple annals of the poor." The touchstone of his high professional integrity was the Golden Rule, and this was also the control in his professional judgment. "He taughte, but first he folwed it him-selve."

His attainments were those of generous merit, finely free from the devious devices of the professionally unfit; he attained distinction, he avoided notoriety. As a teacher of surgery for many years, he was strong, incisive, convincing; in the promotion of useful medical enterprise he was active and resourceful; his influence in general education was widely sought and highly respected; in religious, civic, and esthetic activities his feeling was broad and his work effective; his personal relations were marked by exact integrity and generous refinement.

Death passed, and we lost a friend. In the words of Carlyle, "When he departed he took a Man's life with him."

C. E. BRIGGS.



## Memorial Services

---

DUDLEY PETER ALLEN

---

Sunday Afternoon, January 24th, 1915  
The Second Presbyterian Church,  
Cleveland, Ohio

---

*Invocation by Rev. Paul F. Sutphen:*

Oh, Thou, our Lord God and blessed Father, who art the Creator of our lives, keep and preserve us as we journey along this earthly way. Grant us an assurance of Thy gracious presence in the midst of our sorrows and our heartaches. Speak, Oh Lord, to Thy servants, and give to us this day the realization that though we walk through the valley of the shadow of death, Thou art with us, and Thy rod and Thy staff they comfort us, and out of the shadows Thou wilt lead us into pastures green and beside waters that are still, for Thy namesake, Amen.

---

*Doctor Sutphen:*

It is peculiarly fitting that President Henry Churchill King, of Oberlin College, should be the first speaker upon this occasion, and should speak to us somewhat concerning the interests of Doctor Allen in the great educational work of that institution and of the world. President King.

---

*President Henry Churchill King:*

We are gathered, dear friends, to pay our tribute of honor and love to a distinguished surgeon, a citizen of marked public spirit and of wide and enduring service, and a Christian gentleman with scientific, artistic and moral enthusiasm, who built his life into important institutions, and proved himself in all his activities alike a discreet and most valued counsellor and a loyal and devoted friend.

Doctor Allen was born at Kinsman, Ohio, March 25, 1852, his father and grandfather both having been physicians before him. His father moved to Oberlin in the sixties and became one of Oberlin's most esteemed and beloved physicians. Doctor Allen's later boyhood was thus spent in Oberlin, and he gradu-

ated from its college in the class of 1875, with the degree of Bachelor of Arts. His health compelled him to intermit his college work for a year in the midst of his course, and he used this year to roam at leisure through the wide realm of literature. He always looked back to this year as laying the foundation for his literary interest. It was also the beginning of his discriminating literary taste. Upon the basis of his college work, he proceeded to build as thorough a medical training as the world could then give him. He won his degree of Doctor of Medicine from Harvard University in 1879; spent the following year as a resident house physician in the Massachusetts General Hospital at Boston; put the years 1880 and 1882 into medical study in Europe, and the Fall of 1882 into further study in New York and Philadelphia, supplemented in 1887 by still other study abroad.

His entire medical career of twenty-eight years was spent in Cleveland, beginning in 1883 and continuing to the time of his recent retirement from practice in 1911. His medical teaching covered the same period, since he began his teaching as a lecturer on minor surgery in the Medical Department of Western Reserve University in 1883, and had been, at the time of his retirement, for many years Professor of Surgery. During these years he was successively Visiting Surgeon at the Cleveland City Hospital, Charity Hospital, and Lakeside Hospital, and won a national reputation as a surgeon, being called for critical operations to many parts of the country. In the meantime he was contributing numerous special papers to medical journals. The confidence and esteem of his medical associates were shown at different times by his election as President of the Ohio State Medical Association and as President of the American Surgical Association. Doctor Sawyer will speak, as I cannot, of his medical career; but when even a layman attempts to visualize the extent and quality of the humanitarian service involved in so long and distinguished a medical practice as that of Doctor Allen, he gets a new sense of the greatness of the man's work.

It was characteristic of the scientific thoroughness and far-sightedness of the man, that he should have devoted himself so unstintedly to the building up of the Medical Department of Western Reserve University, of the Cleveland Medical Library, and of Lakeside Hospital. He coveted for Cleveland sound medical foundations of a high order, and he built his life into them. Nor were his interests confined to his profession, crowded



as his professional life was. It is illustrative of the breadth of interest of the cultivated man, that he was also a trustee of the Western Reserve Historical Society, of the Cleveland Museum of Art, and of other similar institutions.

His Alma Mater honored him with the degree of Master of Arts in 1883, and of Doctor of Laws in 1908, and elected him a member of its Board of Trustees in 1898. He has served continuously on the Board since that time, a period of sixteen years. Doctor Allen was a well-nigh ideal trustee. Broadly and thoroughly trained, scholar, teacher, and a man of science, standing steadily for high standards, sensitive to the esthetic elements of the college life, with clear insight into its problems, far-sighted in the development of college policies, tactful and thoughtful in his personal relations, and yet steadily persistent in his pursuit of a goal once set, and loyal to his duties as trustee and in his support of the college—he was a councilor and friend quite beyond price. A single illustration of his esthetic interest is seen in the fact that while still a medical student at college, he turned to Oberlin its first set of art photographs that began all its art collections. Such men cannot be replaced. Their work is, in the nature of the case, individual and unique. Doctor Allen helped repeatedly in various financial campaigns for the college, and pledged generously for the new Art Building whose erection begins in the spring. His counsel in the working out of the plans for that building, as well as in the general plans of the college, has been invaluable.

In all this varied work as student and teacher, and physician and public-spirited citizen and trustee, he revealed his own spirit—the spirit of a man of ideas, of conviction, of courage, of balanced judgment, of esthetic feeling, and of moral and religious convictions. We shall greatly miss him in all these ways alike: “He was a splendid man and was looking forward to years of usefulness and planning for many lines of activity, impossible to him when in the midst of his great professional practice.” Many of his friends would echo the words of his fellow trustee, Senator Burton: “I had hoped that after his retirement from surgical work he would live a long number of years, giving the benefits of his very valuable activity to philanthropic and benevolent work for which he was so well qualified.”

But there was one fact concerning Doctor Allen, not known probably to many even of his associates, that deserves a word of

mention if we are truly to appreciate his life of cheer. I may let one of his college classmates, also a fellow trustee, express it: "Dudley was never rugged. He knew the limitations of his strength; but he kept up such a brave, bluff, hearty, smiling presence that few suspected the struggle he maintained. He talked with us about it in his school days long ago, and let some of us realize his load. He was an example of courage against the ills that flesh is heir to—of how a man can be bright and genial under suffering and brighten others by keeping too busy to complain. In this broad, genial, bright, sunny spirit he lived and died." Always the life of any company in which he was, it is difficult even for those who knew him well to realize the constant struggle against physical limitations that was involved.

I have been thinking much in the recent months that the highest product of education may be said to be the thoughtful man, in the widest interpretation of those words. That would mean a thinking man, a man with insight into the laws of life, a man of inner intellectual integrity, a man who can see things in true proportion, a considerate man, and a man entering into the great intellectual and spiritual heritage of the race. And that would mean, in turn, a man characterized by the scientific spirit, the historical spirit, the philosophical mind, esthetic appreciation, the social consciousness, and religious discernment and commitment. It is to Doctor Allen's high honor that we say that few men so fill out this conception of the thoughtful man as did he, our associate and friend and helper. Every point in that characterization might be dwelt upon as characteristic of him.

We lose him temporarily, but "God's servants do serve Him," and we may believe that he has entered on a still larger service in another life.

---

#### *Doctor Sutphen:*

I presume there were but a few members of the medical profession who stood closer to Doctor Allen all the years of his service in this city than Doctor John P. Sawyer, and it is most appropriate that Doctor Sawyer should speak to us this afternoon concerning Doctor Allen in these relations of his life. Doctor Sawyer.

---



*Doctor John P. Sawyer:*

More than thirty years ago there went from the Harvard Medical School and the Massachusetts General Hospital, a young man who, in taking his training, had compassed the best course of professional study then possible in this country. Three years were spent in Europe in hospital work and laboratory. Born in Kinsman, graduated from Oberlin, he returned to this his home community, and took his place as a beginner in the practice of his profession. Kinship and acquaintance opened to him a certain measure of immediate activity. But no consideration save proven worth can keep such opened fields.

For many years Doctor Allen was a leader, and for long *the* leader of professional activities in this district. A wider field than this has felt the powerful influence for progress and good work to which he always gave his aid, and for which end he always zealously labored. State and national associations were eager to enroll him, and in good season to work under his directing presidency.

Honored at home, in State and Nation, we mourn a proven man, a master whose counsel and great powers were even now being sought in broader fields where the workers are few and from which he will be sadly missed.

To other sides and activities of this many-sided man others direct our thoughts. To appreciate his professional fibre and his power we must recognize first his sense of responsibility. This was to him not alone for the technical performance or procedure that might be done, but was primarily as to what if any known operation or procedure would best serve all his patients' interests.

Daring and resourceful, according to the occasion, he was painstaking and cautious for each patient, and he used habitually that care which every one would wish to have used for his own. To render to each case the product of the best training to be secured for the best exercise of the critical faculty, was in his eyes the obligation due on the one hand to the human being concerned, and on the other to his profession, whose common knowledge is the sum of contributions painfully acquired through centuries of effort by countless men in practice and research. His surpassing skill was utilized in applying judgments formed with widest knowledge.

Such a training so applied brought him quickly the great confidence of the profession, and his noble and unselfish use of it made him a great power among his colleagues.

His ability found more extended application in the advancement of various institutions. In the old Lakeside and in Charity Hospitals he was very active, giving to each the results of his training, when men so trained were very few.

In that early period of the new surgery, he most earnestly and effectively labored for every improvement. Into the Medical Department of Western Reserve University he carried an immense energy and effectiveness in teaching and in organization which was indispensable in the remarkable advancement of that institution. To his power and devotion the progress made was largely due.

To the new Lakeside Hospital he carried this same intensity of purpose and of action, and in its most inspiring development his professional work was highly important. His colleagues, assistants and students derived from him a fine inspiration, and in their progress he continually maintained a kindly interest.

Doctor Allen was conspicuously active, not only in organizations already established, but at the outset of his work he began the movement among physicians which has achieved under his continued counsel and direction, The Cleveland Medical Library. To his foresight and long continued, painstaking endeavor is due in great degree the very existence of this now efficient and important part of our professional development.

While thus engaged in these and other tasks he was continually aiding the needy and giving active help to many whose appeal found him unfailing in response. This spirit of helpfulness was a conspicuous trait, and to have found some need was the reason for his indefatigable effort to meet it. While essentially an idealist he was deeply concerned to compass material facts. It may be well said that "His was the vision of the truly great, which sees things as they are, not as they will."

His colleagues hold him in high honor for his trained knowledge and efficiency; we admire and esteem him for his motives and his character; by his ideals we were drawn to him as an inspiring leader in professional and human endeavor.

In the full view of the great public and private activity, he so lived his life as to compel the respect and awaken the highest regards of all. "True in word, tried in deeds," he lived, honored by his brethren in his profession, and honoring them in his spirit of service through which he rendered to profession, to university, to church, to community, the whole-hearted accomplishment of a good life.



*Doctor Sutphen:*

Among the many interests which entered into Doctor Allen's life, was his interest in esthetic culture. He was peculiarly interested in the development of art, and it is also fitting this afternoon that these features of Doctor Allen's life should be mentioned upon such an occasion as that which brings us together.

Mr. Hermon A. Kelley, who was associated with Doctor Allen in connection with the Museum of Art in this city, will be the speaker to us with reference to these features in the life of our friend.

---

*Mr. Hermon A. Kelley:*

I have been asked to say something today concerning Doctor Allen's civic activities, with especial reference to those which have to do with the art life of our city. While it seems to me that there are others who would have been better qualified to perform this service acceptably, yet I am sure that no one could have been chosen who has a deeper appreciation of the value of Doctor Allen to the work which is being done and still remains to be done in the upbuilding of the art institutions of Cleveland, and the development of an intelligent public interest in those institutions, or who feels more keenly the irreparable loss which the cause of Art in Cleveland has sustained in being deprived of his active and sympathetic support and assistance.

But before speaking of his more recent and public participation in these matters, it will not be out of place to make some brief reference to an earlier period of his life, and to the beginning of his interest in the subject.

My personal acquaintance with Doctor Allen dates back to a time some twenty-five years ago. He was then in the first flush of a professional success which promised, if indeed it had not already given him, a national reputation as a surgeon. Of this, others have spoken. What struck me, of course, upon first meeting the man, was that geniality, that kindliness, that charm of manner, that almost boyish capacity for enjoyment, which will always be a treasured memory of everyone who was even privileged only to shake his hand. And then as acquaintance grew, came many other impressions of worth, to which it is impossible to allude within the short time allotted to me this afternoon. Among these impressions—and I refer to these, not because they were the most important, but because they have to do especially

with the subject upon which I have been asked to speak—were the realization of his breadth of general culture and of his catholicity of taste. These attributes are in these days naturally to be expected in men who make a success of life, and especially of a professional life in any large way. Unless you have a pretty broad man as a foundation, you are not apt to find a very broad lawyer, or physician, or clergyman in the superstructure. Nobody who ever talked with Doctor Allen for half an hour on any subject could doubt that he had laid the foundations of general discipline and culture, broad and deep underneath a professional learning and ability which was imposing, and of the many subjects outside of his chosen profession, which absorbed his interest and upon which he had read and studied much, foremost was Art.

While still a student at Harvard Medical School, he became deeply interested in certain departments of this subject. He found time in addition to his work as a medical student, to join a class in Boston for the study of the history of painting; and those who have discussed with him in later years the work of Italian masters of Art, for instance, have not seldom been astonished at his remarkable acquaintance with this subject. At this early date also, I believe, he began a collection of engravings and etchings, a pursuit which he followed with zeal during the greater part of his life. The members of the Rowfant Club, and others who have heard his lectures upon Etchings and Engravings, are prepared to testify that he had an acquaintance with this subject of which an expert might well be proud.

These are merely illustrations of the preparation with which Doctor Allen equipped himself for meeting not alone the stern requirements of his professional life, but also the equally legitimate cravings of the esthetic life.

But with all the will in the world to cultivate his taste in these directions, it was, of course, impossible for a great surgeon whose time and energies were in the utmost demand for the saving of human life and limb, to turn aside as often as he might have wished into the pleasanter realms of the Arts.

Finally, however, a time came when his health demanded relief from the strain of professional work—a time also which I suppose comes sooner or later to most of us, when he felt that he had earned the right to a rest and to the enjoyment of tastes and activities of a broader and less exacting kind.



Travel had already enriched his mind in these latter directions beyond the possibility of mere study, but now for the first time he was free to gather with a hand relieved from care the fruits of foreign culture. He visited the Orient, and being deeply interested in Chinese paintings and porcelains, greatly enlarged his already considerable collections in these departments of Art.

Later he applied the taste and culture of a lifetime to the planning and development of his beautiful suburban home. To the building and furnishing and landscaping of this home, he gave his best thought—and to what more worthy object can a man devote his thought and effort than upon that sacred spot where he and his are to form their associations and live their lives? He took a justifiable pride in the refined beauty of this country seat, and not the least sad reflection which we have with us today is the thought that he was taken just as he was prepared to enjoy this home to which he had given the last strength of his life.

This brings me to the last, and in one sense the greatest, of the losses which our community life—I do not speak now of the individual loss which we have all suffered—our community life has suffered in Doctor Allen's death.

When the corporation now known as The Cleveland Museum of Art was founded a year or more ago, for the purpose of taking over the administration of the new Art Museum then under construction, there was just one vacancy on the Board of Trustees as originally made up of the members of the two trusts from which the building fund had come. Recognizing the vital necessity of choosing a man for this vacancy whose preparation and qualification in the field of Art would be of real assistance in guiding the administration of the new institution in the best paths, and whose enthusiasm, interest and zeal would do most to push it along those paths, the trustees, without hesitation and almost as one man, turned to Doctor Allen. The wisdom of that choice has never for one moment been in doubt. From the very first meeting which he attended, everyone felt that we had in our midst not only a wise counsellor and a refined and cultured intelligence, but what was even of more importance, a vital force which would go far to insure the success of the new institution.

Doctor Allen's idea of the function of an Art Museum was not that it should be a mere cold storage house for sculptures and paintings. He thoroughly believed in making the institution a living agency for the education of the people; and by the people

he meant not alone those who might have leisure for private study and for unlimited use of the galleries, but all the people. An instance of his insistence upon the necessity of democratising the work of the museum will be recalled by his associates in his earnest advocacy of a department which should collect artistic implements and articles of common use as models for the handicraftsman of Cleveland. He even went so far in this direction as to offer to provide such a collection at his own expense. He was also fully in sympathy with the plans of the Director of the Museum, Mr. Whiting, for bringing the facilities of the Museum to the children of the public schools by class work and the active assistance of the Museum staff, and to the people generally by lectures and the fullest opportunity for examining and consulting the collections.

Time forbids that I should attempt to recount at this time his many helpful suggestions, or to describe to you the zeal and energy with which he entered upon the plans which the trustees have of making the Cleveland Museum of Art a vital force in the civil life of Cleveland. One of his last acts before going upon his last journey to New York, was to gather the Trustees and the Advisory Council of the Museum together at a dinner which he gave, in order to afford an opportunity for formulating plans for the Inaugural Exhibition with which we hope to open the new building. The wisdom and tact, the enthusiasm, and above all, the genial hospitality with which he presided on that occasion, will always remain among the pleasantest memories of my life.

I need not say that in Doctor Allen's death, not only the Cleveland Museum of Art as an institution, but the art interests and art culture of Cleveland have lost not only one of their best friends, but also one of their most active and efficient helpers.

It has been a common saying that busy men who retire soon rust out. This may be true of men who have no interests other than their business. In such cases, taking their business away takes away all there is of themselves. But a man who, like Doctor Allen, was much more than a successful surgeon has so many other resources that the dropping of his professional career does not necessarily mean any loss of interest in life. In fact, in some cases, it may lead to a fullness of life and even a degree of usefulness to humanity which could not have been equalled by the most eminent success in a chosen business.



It is my firm belief that Doctor Allen, after a professional career seldom equalled in its usefulness and eminence, had retired not to a life of leisure. Indeed, I doubt if he had found the rest he expected. Instead of this, he saw stretched ahead of him new fields of interest and usefulness. He had just begun at least one great and earnest labor in these fields. With characteristic eagerness and enthusiasm he had taken up the Art work in Cleveland. Those of us who have had the privilege, during the past year, of working with him in the plans for our new Museum, fully realize what his help meant. We know, as no one else can, what a loss the cause of Art in Cleveland had suffered when his hand was stayed.

And, so we come with you, his other friends, to give such poor expression as words can convey, to the sense of our great loss and to bring our tribute to his memory.

---

*Doctor Paul F. Sutphen:*

It is almost exactly twenty-nine years ago that my acquaintance with Doctor Allen began. At that time there was a coterie of young physicians in Cleveland, mutual friends, I might call them, several of whom have since attained high distinction in their professions, and are among the most eminent specialists in this city today. None of them gave promise of a more brilliant future than did Doctor Allen, a promise which all of us know was so magnificently realized in the years which followed. But even in that day, when his brilliant career was opening before him, and in the enthusiasm born of successful achievement, a young man might have been pardoned for narrowing his life to his profession alone. Doctor Allen's interests were varied, among which was his devotion to intellectual and esthetic culture, of which others have spoken this afternoon, and his religious idealism was a family inheritance, which was to express itself in so many practical forms as the years went on. It is of this side of Doctor Allen's life, of his religious ideals and activities, that I wish to speak a very few words this afternoon.

Doctor Allen was fortunate in having a religious background. He came of a family in which Christian faith and service had flowed on from generation to generation, and in an age when the advance in every department of physical science had brought into question many traditional religious beliefs and had destroyed

the faith of many, and commercial materialism had crowded out of the lives of many others the spiritual idealism. He never found occasion to drift into religious negation, or to become the disciple of an agnostic philosophy. The significance of this statement, of course, lies in the fact that he was pre-eminently a scientific man, yet his broad knowledge of scientific discoveries, often in conflict, as they were, with traditional religious opinions, did not create in his mind any inconsistency in holding to the essential features of religious faith. This does not mean, of course, that he held the old dogmas as our fathers used to hold them.

In all our long acquaintance I had but few conversations with him on distinctively theological subjects, but upon those rare occasions it was obvious that his creed was simple, concerning itself rather with the vital principles of Christian living than with the untenable positions of the schools.

Doctor Allen became a member of this Church thirty years ago, and served it with distinguished fidelity from first to last. In 1893 he was elected to the deaconate, and fifteen years ago was elected a ruling elder, which office he filled until his death, and both of which offices he dignified by his character and by his wisdom in counsel.

In the mid-week services of this Church his voice was often heard in prayer, but his religious life, as we knew it, expressed itself most frequently in terms of direct and practical achievement. The interests of this Church and the cause of religion in general in the world were very dear to his heart. So far as it lay in his power to do so, he aimed to make them effective. He wanted this Church to be an efficient instrument of good to this whole city.

We are surrounded, my friends, at this present moment, by the evidence of his tireless efforts in this direction. Many months ago he felt that we could not do our work in this community properly unless our equipment was much enlarged and improved. The plans which he had in mind were very large, and involved a very considerable expenditure. But he bent to the task with his accustomed energy, enlisting the interest and the co-operation of this whole congregation, while both he and Mrs. Allen munificently contributed to the accomplishment of the end in view. The result is visible to all who are here in this house today, in the new beauties of this house of worship, in the great organ which is heard here today for the first time, and in



the changes for more practical service in the Chapel adjoining this building. While very many people contributed to this splendid effort, and all of them deserve credit for the final result, it was Doctor Allen who conceived it, who inspired it, and who never rested until it was accomplished. Without that inspiration and effort we should not be surrounded by these things today, and whenever we shall enter this Church in the future, and look upon these things, we shall always think of him.

His religious interests, however, were by no means confined to the work of this particular congregation. He was a member of the committee for the enlargement of the Italian Church in the East End, and devoted much time and constant effort and supervision, personally, to that work, until it was accomplished. While he had no sympathy whatever with sectarian ambitions, and was always opposed to the planting of churches in regions which he felt were sufficiently supplied with churches of other denominations than his own, he gladly furthered every intelligent effort for the promotion of religion, whether fostered by the Presbyterian or any other Church of Jesus Christ.

But most of all he had a world vision. He had visited the principal nations of the non-Christian world, and knew their physical, spiritual and intellectual needs as few persons in this country knew them. He did not need those personal contacts to make him a believer in the great foreign missionary work of the Christian Church, for his intelligent study of that problem had made him that long before he had ever set foot upon the soil of India, China or Japan. But these personal contacts intensified an interest which had always been keen, and stimulated a desire which had always been great, to aid in every possible way the work which the Church has undertaken in these distant parts of the world.

Naturally he was very strongly drawn to the beneficent ministry which the Church carries on in its medical and surgical departments of foreign missions. He visited hospitals in foreign lands wherever he found them, and his valued advice, which he was so abundantly able to give out of his large experience, was eagerly sought by them. He was present at various times in their operating rooms, and I have heard him speak with unalloyed enthusiasm of the skill and efficiency of the medical missionary in the most critical and difficult operations, and in the most trying situations. But his interest in this great cause of

the Christian Church did not end with its medical work. In its educational and evangelical departments he was also greatly interested, and each of them made to him a great field, and none were ever more honored guests in his home in this city than missionaries from foreign fields, whether physicians or clergy, who had returned temporarily to this country.

We have been thinking this afternoon, my friends, of a very many-sided life. It is given only to a few to compass such a variety of human interests and to excel in so many widely different channels of human effort.

The world is always poorer when such men are taken from it. And yet, perhaps we can never get the full value of their example or inspiration until we see them somewhat in perspective, just as we need to stand somewhat at a distance to perceive the beauty or grandeur of a lofty mountain whose lines are not discoverable as we stand at its base.

Can we more fittingly bring these simple tributes to a close than in the words of Carlyle in his reminiscences of his father:

“And now, beloved father, farewell for the last time in this world of shadows. In the world of realities may the Great Father again bring us together in perfect holiness and perfect love.” Amen.

---

## The Cleveland Medical Library Association Memorial Meeting

---

DUDLEY PETER ALLEN

---

Tuesday, February 2nd, 1915, Eight O'clock P. M.  
The Cleveland Medical Library,  
Cleveland, Ohio

---

*Doctor B. L. Millikin:*

Friends: It seems to me that a service to the memory of Doctor Allen in connection with this Library is exceedingly appropriate. No one has done more for this organization and its support and development and has given it more constant care and attention than Doctor Allen.



The meeting will be presided over by Doctor John P. Sawyer, whom I have the pleasure of presenting to you. Doctor Sawyer.

---

*Doctor John P. Sawyer:*

A service in memory of a man who appealed to the hearts, the minds and the admiration of all of us, is, as Doctor Millikin has said, well held in this institution, and in this very room, which must always be associated with his work and which must always speak to us of his forethought, his planning and care for professional advancement, and particularly for his interest in the younger men, that they might find here some ready expression of the good-will of the older men, to aid them in the undertaking of their professional life, which he himself had missed.

It is fitting, as I say, that we should meet here and think upon the characteristics of this man whom we all revere.

Among his many activities none began earlier than his association with academic education, and in Oberlin he laid the foundation of a broad education. There he also became deeply and intensely interested in the institution which was his Alma Mater, and to which he constantly and energetically gave a large amount of the thought and foresight which he showered for the benefit of all around.

I am sure we are all glad to hear tonight from the President of Oberlin College, who will tell us of his activities and interest in that institution. President King.

---

*President Henry Churchill King:*

Mr. Chairman and Friends: The biographical details of Doctor Allen's life were given so fully in the Memorial Services at the Second Presbyterian Church the other day, that I am sure it is not necessary for me to recur to them tonight. You all know how close and intimate through many years Doctor Allen's relations with Oberlin have been, and I tried to express the other day something of the depth and extent of the debt which Oberlin College owes to him for all that he has been, and done, and especially in his well-nigh ideal services as Trustee. But there is one aspect of Doctor Allen's life upon which I would like to dwell.

It has long seemed to me that we could not perhaps frame a better definition of the end of education than to say it was the production of the thoughtful man, and it is from that point of view of the thoughtful man as the end of education, that I want you to think with me for a few moments of Doctor Allen.

The thoughtful man ought to mean the thinking man. It ought to mean a man who discerns the laws of life. It ought to mean the man who has inner integrity; the man who sees things in their true proportions, the considerate man, and the man who is entering with some conviction and appreciation into the great intellectual and spiritual heritage of the race. And I want to ask you to see how completely that definition is fulfilled in the man whom we are glad to honor tonight. There is no time for details. I can barely indicate what your knowledge of the man must fill out.

First of all, I do not think we can fail to see that if a man is to be called a thoughtful man, he must be a thinking man. You know Emerson says the true definition of a scholar is "man thinking." Sometimes it seems as if we had almost forgotten the definition, but it still holds good. And I do not believe anyone could have known Doctor Allen intimately without seeing that not only in his profession, but in many another field, he was a thinking man—thinking clearly, thinking steadily, thinking thoroughly, and with some measure of exhaustiveness. That thoughtfulness meant for him the bringing to bear the best powers of his mind on problem after problem, of proving himself a thoroughly educated man in his mastery of the thinking process.

It seems to me not less true that Doctor Allen proved himself a thoughtful man, in discerning and obeying the laws of life. It ought to be true of the physician and surgeon that he should have naturally this insight into at least certain laws of life. You know that Huxley says that education is the instruction of the intellect in the laws of nature—including not only things and their natures, but men and their ways—and the disciplining of affections and will into an earnest and loving obedience to those laws. Now, if that is a true definition of education, it ought to be natural for the physician to fulfill it. It would seem that it were almost impossible for a physician not to carry that discernment of the laws of life into other spheres than the physical, and I am sure that we all must feel that Doctor Allen did carry over from the field of the surgeon into other spheres of life this same instinct to see what the laws of nature were, and earnestly and lovingly to fashion affections and will into obedience to those laws. In this respect, too, it seems to me that in rather a rare degree he fulfilled the definition of a thoughtful man.



There is a third demand that education makes upon a man as to thoughtfulness. It should mean that he has inner integrity. It seems to me sometimes that this is the very essence of the scientific spirit, for the scientific spirit might be said to be the habitual determination to see straight, to report exactly, to give an absolutely honest reaction upon the situation in which a man is placed. Now, if that is the scientific spirit, it can be truthfully called inner integrity, and I do not know any closer parallel to this demand that modern science makes upon its devotees than that inner integrity that Jesus desired from his disciples. That kind of inner integrity that involves trying to be faithful, true and straight in one's thinking and in one's reactions, it does seem to me that Doctor Allen had in a rather unusual degree.

But the thoughtful man must also be a man who sees things in their true proportions. Perhaps that is the best definition we have of what real thoughtfulness is. For it holds for the man who sees things in their true proportions, that the things that are really great loom up as great, and the things that are of minor importance sink back into their relative insignificance. One of the real tests of the wholesome sanity and breadth of a man is this seeing things in their true proportions. Now, I think that we should all agree that that was particularly characteristic of Doctor Allen; that there were not very many spheres of life into which he could not enter with some real appreciation of what they meant. And, therefore, he was able to think them into proper relation to other things, and to see them in true proportion. So far as he was able to do that, he fulfilled once again this definition of the thoughtful man.

The thoughtful man must be also the considerate man. Because a man who is genuinely thoughtful must be thoughtful in his personal relations, and thoughtfulness there means what we call considerateness. And although Doctor Allen often saw situations keenly and expressed himself upon them vigorously, even in his differences with you, he usually differed with such courtesy, and with such good nature, that after all you could not be offended. Doctor Allen knew what it was to be singularly thoughtful in this sense of a considerate sensitiveness to the finer and more delicate implications of those relations in which he stood to men. In this sense, too, it seems to me he largely fulfilled our thought of what is meant by thoughtfulness.

And once more, I do not see how a man can be said to be really thoughtful who has not entered into some real personal sharing in the great intellectual and spiritual heritage of the race. Must it not be at least asked of higher education that it should help its students to understand what these great intellectual and spiritual achievements of the race are, and to give them some real share in them? What are those great intellectual and spiritual accomplishments of the race? I think one can list them pretty accurately: They are the scientific spirit and method, the historical spirit, the philosophical mind, esthetic appreciation, the social consciousness, and religious discernment and commitment. I do not see that any one of them can be omitted, and the man still be brought into a personal sharing in the great intellectual and spiritual achievements of the race. And it seems to me very interesting that in so large a sense we can say that the man we have gathered here to honor, had shared in these rare achievements.

That he should have shared in the scientific spirit and method, was almost involved in his very profession, of course; though some men have that attitude in certain lines and fail to carry it outside those lines. One of the noteworthy things about Doctor Allen was, that he so largely carried that scientific spirit and method over into the many other spheres of life with which he had to do.

He had a good measure of the historic spirit, too. For the historic spirit is, after all, simply the ability to put yourself at the point of view of the other man, of the other race, of the other time and clime, and to see through his eyes. Now, in no small degree Doctor Allen had that ability. He really shared in what is a comparatively modern achievement—the historic spirit.

I do not know what he thought of himself as emphasizing the philosophic side, and yet the philosophic mind is at bottom only the determination to see life steadily and to see it whole. The philosophic mind is determined not to concern itself merely with the immediate connections between things, but to get beneath these and ask some of the ultimate questions—to ask as to the meaning and value of things in their entirety. And Doctor Allen was certainly not without that interest.

It is still more clear that he was fully awake in the sphere of esthetic appreciation. If you will stop to think how closely related in the thought of men have been truth and goodness, and



beauty, you may think it is not by accident that a man who is sensitive to these other aspects of life, should find himself so drawn out in the love of beauty. And how strongly and in what multiplied ways the sense of the beautiful marked Doctor Allen, you who knew him do not need to be told.

Our age counts itself above all, the age of social consciousness, with the threefold sense that we are members one of another, the sense of the essential likeness of men and the sense of the priceless value and the inviolable sacredness of every individual personality. I do not suppose that Doctor Allen had been drawn out on the theoretical side of this consciousness as much as many of his contemporaries, and yet he felt sincerely with other men. You know how ready he was to give ear to cases of need, to enter with real sympathy and understanding into each case, and to render them the full service that he could see it was given him to do. If he was conservative in his views on some social reconstruction, it was not the conservatism of hardness of heart.

And finally, among those great spiritual accomplishments of the race has always been put religious discernment and commitment. One cannot ask ultimate questions anywhere without coming into the sphere of religion. And Doctor Allen plainly felt that he must ask those ultimate questions, and find his way through to some satisfying answer in that realm. He needed to know the world was a world in which he could rationally think and in which he could rationally live; that the world did not contradict the deepest in his own nature. And, deep as were his other interests, he would have felt quite incomplete without religious faith.

In all these respects, therefore, it has seemed to me that one might truthfully say that Doctor Allen had really in a rare way fulfilled the ideal of a thoughtful man. He was a truly thoughtful man in the widest sense; a thinking man, a man who could discern and obey the laws of life, a man of inner integrity, a man who could see things in true proportions, a considerate man, and a man who personally shared in the great intellectual and spiritual achievements of the race that I have just named—the scientific spirit, the historical spirit, the philosophic mind, esthetic appreciation, the social consciousness and religious discernment and commitment. Need I say that it is only of a large man of whom such a characterization could be approximately true? I bring to Doctor Allen's memory, therefore, one of the highest tributes I can bring, when I remind you in how rare a way he fulfilled this characterization of a thoughtful man.

*Doctor Sawyer:*

It would seem somewhat superfluous for me to introduce our next speaker. It is fitting that in this meeting in memory of Doctor Allen, we should have speak to us one who is himself so highly esteemed and honored in the profession.

---

*Doctor J. H. Lowman:*

Mr. Chairman, Ladies and Gentlemen: No member of the medical profession represented the New England spirit as modified on the Western Reserve more clearly than did Doctor Allen.

By birth, tradition and inheritance he was close to the early feeling of his native place and of the pioneers who planted this bit of culture in the Northwestern Ohio wilds. His grandfather, Doctor Peter Allen, almost disputed the northwest territory with the Aborigines; and when Cleveland was part of Trumbull County, made long journeys through the unbroken forest on errands of science and mercy, and was closely identified with all the early worthies who gave this part of the State so notable a history.

In Kinsman he built him a house of so beautiful a colonial design, and of so ornate an interior, that his grandson, a few years since, brought back the decorations of the drawing-room and placed them in his new residence in the city of Cleveland. I had almost said his adopted home, but no one born on the Western Reserve considers Cleveland an adopted home. It is his city even if living miles away.

The first Dudley Allen, our Doctor Allen's father, pursued the career begun by the pioneer of the family. As the towns began to grow, the roads to improve and colleges began to modify the temporary roughness of the Connecticut emigrants, he moved to Oberlin, that temple in the forest rooted to enduring principles of national and social progress. The conviction of the ancestors of the Ohio immigrants reanimated this community. No more earnest company could be found, or one more devoted to the ideals of religion and education. Every one in some way or other contributed his effort for the development of the institution which conscience had planted among them and named after the great Alsatian philanthropist. It was under such surroundings and such conditions that Doctor Allen's mind commenced to unfold. The family anecdotes were of log cabins, wolves, Aborigines and Indian wars. His early friends and playmates were children of earnest people who were striving to



hold up the church and a college. Small wonder, then, that he soon developed definite convictions as to his life and what was to be his part in it.

He naturally entered Oberlin College and graduated there, but though full of energy and spirit, he showed no special aptitude for study—that is, he did not realize the importance of scholarship until he began his medical studies; even then, although he became one of the men of mark and honor in his class in Harvard, and easily gained some of the first positions, it was rather because of his thoroughness, persistence, practical astuteness and unflagging industry, together with his eminently practical ideals, that he excelled, than because of his scholarship. As a medical student he was determined to take a certain position, and no sacrifice was too great for him to make to gain it. This represented life to him then, and would, he believed, lead to a richer life afterwards. These experiences were continually coming to him because he ideally created them as he moved along towards the goal which was constantly before him.

He came to Cleveland because it was in reality his home. His feeling for the scenes of his forefathers was very beautiful. In those days he wrote a most interesting sketch of medical men and scenes of pioneer life which has a definite historical value. I can remember how the editors of the historical magazines that published the article searched for the proper writer, and their conviction of having found the worthiest one after meeting the Doctor.

Allen traveled extensively in the ten counties about here, and tracked back many a tradition, traced many a legend and saved the story of many thrilling incidents from oblivion. It was his first serious effort of the kind, and he was fond of this literary child. The “knowing ones” could occasionally detect his veiled references to it in his conversation. To continue, however, in that line, was not according to his nature, his spirit or his determination. This early work afforded, nevertheless, a glimpse of the love of romance, and art that was deep in his being, and which took such splendid form when it was at last no longer violently repressed. I fancy that very few knew that it was there, and these few were, in one way or another, his intimates.

At a very early period in his medical studies, he determined to be a surgeon, and nothing swerved him from this in the slight-

est degree. This decision did not spring from the precocious ebullitions of a pseudo-scientific youth, for his boyhood was singularly sane and uneventful, but came as a result of his reflection on medical subjects in general, and of the relative importance of medical practice, and also because of a decided personal bent in that direction.

The surgeons were very important teachers in the days of his novitiate. The glamour of the surgery of the Nineteenth Century had not yet dimmed, and most medical students wanted to be surgeons.

Doctor Allen's early predilection led along the way to success. He studied in Europe, made many acquaintances, which continued through his life, and connected himself with his home hospitals and teaching bodies, though always in the line of surgery. While he was teaching minor surgery, a place in the medical faculty was offered him as Professor of Gynaecology, but he waved away the crown, although it was repeatedly offered, preferring to remain outside the professional pale and teach his little minor surgery, than be diverted into other lines. His action was criticized by many, his decision considered impolitic, and his position obstinate. He would have yielded, and possibly threatened his career, had he not had so firmly fixed a preconceived idea. When once he was convinced, he could not be turned from his policy. There were certain difficulties to be overcome before he could enter the faculty in his own way, so he waited, but he never compromised.

It was this persistent, determined effort to follow out a schedule of life that in a great measure protected him and enabled him to go deeply into the problems that he encountered, and arrange a plan for meeting and successfully overcoming certain social conditions, particularly in hospitals and institutions. He developed an unusual degree of system in his work, even though he himself was not essentially systematic. He had a romantic, boyish, exuberant streak in him that would at times find itself at enmity with any system. This revealed itself in a thousand ways. In his life he was humane, but in his plans of organization, in his rule of others, he was inexorable. It seems as if such men believe that their systems partake of the nature of the absolute. I remember running into this surgical entanglement once; I wanted something done that interfered with the discipline of the hospital ward, but soon found that I had slipped



in where angels fear to tread, and that the scheme of things in force was unyielding. Nevertheless, this very ability to organize led to great developments. Never were surgical wards better managed, or the assistants more encouraged. Many strong surgeons grew out of these stringent conditions. Doctor Allen knew the place of every instrument and every dressing, and was more familiar with every detail of the operating room than nurse or interne. He was an unselfish friend of young men, gave them every opportunity for development and had about him at the end of his career a brilliant galaxy of young colleagues who all unite in saying that while he was a severe task-master, he was always a kind one, and a great instructor.

In the meantime the man had grown until he ranked with the leading surgeons of the country. His development had been remarkably even, and he operated equally well in all departments of general surgery. He was strongly opposed to surgical specialties, and always held that a surgeon should be equal to all the demands that surgery could make upon him. He was familiar with the literature of his subject; contributed to medical journals, and was thoroughly up in his department.

Doctor Allen had a fine *esprit de corps*, and was always ready to assist his brother practitioners in distress, and took the greatest pains with the simplest patient in his wards. His scientific conscience compelled him to do his best at all times. He knew his ability, appreciated his opportunity, and realized the obligations that rested upon him. It was with him *noblesse oblige*, and in his work he was a noble exemplar. This fine quality of the true physician no one can know in its essence, not even his family, his friends, or his colleagues—no one, in fact, save he who comes under its immediate influence and protection. It is an unusual privilege and satisfaction to speak for so cultivated a protagonist.

Doctor Allen became President of the American Surgical Association, of which he had been Secretary for many years, and Professor of Surgery in the University. At one time he realized that it was for his interest to be President of the Ohio State Medical Association, and at the next meeting he was made President. He was not particularly ambitious, but there were one or two things in a professional way that he wanted, and these he secured.

In his address and argument, he was too eager and intense

to conciliate others easily, and this characteristic was somewhat manifest in his face and figure. He was often obliged to break down an opponent through an exercise of power when he was unable to convince or divert him. But he was always fair, and his springs of boyish humor would frequently harmonize fancied antagonists.

He was very much interested in all things medical, and was intensely professional in his ethics and practice. He often spoke of getting the representatives of the profession together in some genial, wholesome way. To accomplish this, he conceived of the Medical Library, and it was largely by his efforts that this idea finally came to realization. He was its president for some years, supported it and brought about its reorganization and development. His intelligent disinterestedness will long be remembered, and the Library itself will be his monument.

It is hardly necessary for me to attempt to analyze his career as a surgeon, except to say that he was the great conventional surgeon. Although very eager for new methods in the beginning of his career, he very quickly grew conservative. When he first began operating he advocated the heroic use of the paquelin cautery, a procedure almost incomprehensible, but he very quickly abandoned it. His shrewd wit always kept him well away from tricky paths, pseudo-scientific pitfalls and meretricious methods. Thus he finally became in his work, as he was in his character, absolutely honest. He would never select cases to improve his records of mortality; this he considered grossly unfair, nor would he operate a case that was surgically possible were the risks too great, and his judgment on this point was very clear. I was always impressed with his basic ideas on the problems of old age. He very rightly thought that threatened surgery of old age should be adequately considered long, years even, before the conditions became acute, and a decision reached as to what would be the final act of the family. In councils where the reasonableness of a presumptive future operation was discussed—there I usually found Allen holding most conservative opinions. He never forgot that he was dealing with human life, and was never diverted by merely scientific curiosity. When, however, the aged did require his surgical aid, he attacked the problem with a precision and speed that made him seem like a pupil of Malgaigne of the golden era of France, who was wont to hypnotize his patient with



the magical word "Courage," and then finish his work with a few strong, well-placed strokes. I wonder that those old heroes were not called etching surgeons.

The *sang froid* of some surgeons is almost uncanny. Coolness is necessary, but not coldness. I never observed that in Allen. He was at times sharp and even snappy in his orders, and made his assistants jump as if on springs, especially in some great emergency or threatening calamity. Stupidity, under those circumstances, he could never forgive or pass over quietly. But even in times of greatest excitement, and moments of great importance which come in a long surgical experience, he never lost his head, rarely failed in his judgment, or slipped an opportunity. His capacity or clear judgment in the midst of a serious operation where the unexpected or the accidental happened, was, in my opinion, one of his great assets. After he had perfected his technique, developed his organization and grown famous, and was almost the last court of final audit, he still perhaps might have been rivalled in these, which might be called material advantage, but in the ripeness of his judgment, the conscience of his reason and his spasmodic, puritanical self-driving, he stood alone in a large and crowding community, so that when he retired, as he was approaching his three score years, he had so balanced his ethical and scientific standards that his surgical decisions had many of the elements of fine gold. There was little alloy in them. Although young, he was in the ripe maturity of years, and had some of the qualities of a sage.

His departure from the profession was a calamity, but when one recalls how soon afterwards he went out from us forever, it was perhaps, at least for him, not to be regretted. His divorcement from practice was as sudden as his death, two years afterwards, and it was almost impossible to readjust one's self to either event. It was difficult for Allen to readjust himself to the former, the ties that bound were too strong to give way without some laceration. He very wisely went away, and with his life companion visited those places in the Orient with which he had always been sympathetic. He returned after a year, bringing with him the treasures of Ormuz and of Ind.

His health suffered much in India, and his friends feared for him, because he had never been robust, although wiry, enduring and capable of prolonged effort, and had combatted some annoying troubles throughout his active life, but he recuperated soon

from the fatigue of his travels, regained his usual health, and soon new interests brought back his old exuberance, and the last chapter of his career began.

His life was like an unfinished symphony that opens with a simple natural theme, develops harmoniously and directly into a paean of praise, and then falls suddenly into a pathetic minor strain for a short movement, only to come through more complicated resolutions almost back to the opening theme which justified the rational expectation of a triumphal finale. But the original key is never struck again, and the sudden ending leaves one hoping, longing, unsatisfied and appealing for explanation.

Doctor Allen's career was well rounded and complete. He had that quality of satisfaction which comes from doing good, honest work, and doing it unusually well. His poise prevented his having any illusions on that point. A full share of honors came to him and brought their meed of satisfaction. He had a wide acquaintance and many friends and admirers. Success sometimes hardens, especially if one is too self-centered, but it often humanizes, also. As the Doctor's mind became fuller, he was less rigid and more mellow and conciliating. He would probably have been modified by a more thorough understanding of the problems of internal medicine, but the side of philosophical medicine did not appeal to him. He could detect and eliminate a surgical complication with precision, but he was much less accurate in deciphering a medical one. He was caught and held by the surgical art in the way that Bilroth describes when he says that the surgeon should see the results of his work in advance, as the sculptor sees the image in the untouched block of marble. The surgeon should be an artist. This Allen was, and this made him pre-eminently the surgeon specialist. It was probably that quality in him which gave him such aptitude and ingenuity. It made him resourceful in mechanical devices, but did not help him in the administration of drugs.

Even while deeply immersed in his surgical practice, his esthetic nature found satisfaction in the collection of pictures and objects of art. He developed this side of his nature in the right way by following good advice and certain fundamental canons of art, and secured only well-known examples rather than specimens that he simply liked. Here his scientific training helped him, and as his collections grew he himself was gradually trained in this line and became a connoisseur. His collections of etch-



ings and engravings were of the best masters, and his objects of Oriental art were excellent specimens of the best periods. When, therefore, he was relieved from the burden and drudgery of work, he literally blossomed into a patron of the arts. Fortune favored him, and he had abundant opportunity of gratifying his tastes and desires. When he came back again to Cleveland, there was a single vacancy on the Board of Trustees of the Art Museum, and Doctor Allen was elected to fill the place. It was a happy choice. He immediately took an important place on the Board, became one of the Executive Committee, and took a deep interest. One could at once detect his methods at work. He wanted to see the original documents, the important minutes, know the policy, prospects and resources, and freely made many suggestions. Almost his last act, before his final trip to New York, was to bring the trustees and advisory council together at a delightful dinner, where the preliminary plans were discussed for the opening exhibit of the museum this coming autumn. There was every indication that the Museum was dear to his heart, and that he would advance its interests in every way possible. He had already made a substantial contribution to the Art Museum of Oberlin, and it is very evident where his taste and inclination lay.

It is exceedingly rare that a man who has followed successfully a professional career has after his retirement from it the opportunity, together with the gifts of foresight and courage which enable him to spring with enthusiasm into another life, demanding so much noble effort and of so much promise to this community as this new departure of Doctor Allen. His loss, therefore, is not alone a personal one, and a loss to the medical profession, but a loss to the commonwealth as well. One might forecast what he would have done from what we know of his character and ideals almost as accurately as Cuvier forecasts wonders from fragments of the past. To attempt to do this now, however, would be to trespass on sacred ground.

Doctor Allen's mind was such that there was never any doubt as to his conviction or his intent; one always knew what he stood for and what he meant, even if one did not agree with him. Having been thoroughly convinced that his delight would be in the development of the esthetic side of his nature, there is no doubt that he would have fostered all means to gratify it, and where could he have found greater opportunity than in a leading part in the care and control of a great Museum of Art.

It is asking almost too much of a life which has furnished one complete professional career to supplement it with another, but this was the expectation of many of us, and we believe that only a tragedy prevented its realization.

Thus Doctor Allen's life had many positive phases, every one of which was plainly evident. His surgical side was clearly defined, his religious life was simple and unostentatious, his administrative ability as known on the Boards of Oberlin College, and the Historical Society, was marked, his taste in art was rapidly crystallizing into excellent form, and his philanthropies, though recent, were generous and discriminating. That such a life, so versatile, so full, so eager, so prepared, so ready for still more splendid achievement, should have been lost just on the threshold of a final completeness, will always be the source of one of our profoundest sorrows and regrets.

---

*Doctor Sawyer:*

I have here a letter from an old classmate of Doctor Allen, Doctor George H. Monks, of Boston, which I am asked to read.

After speaking of his regrets at not being able to be here, he wishes to say a few words concerning Doctor Allen:

---

*Letter from Doctor Monks:*

I first knew him when we were both students at the Harvard Medical School, but it was not until we were house-officers together on the surgical side of the Massachusetts General Hospital that I became really acquainted with him. That time marks the beginning of an intimacy between us which has lasted nearly thirty-five years, and I now look back on this friendship as a cherished memory.

"Uncle Dudley," as we all loved to call him, was an earnest student and a very efficient assistant. He was observing, conscientious and humane in all his work. He studied carefully the cases under his charge, and he was full of resources as to the best treatment for them. His fixed determination to acquire all the surgical experience, the care of the hospital wards could furnish, was also one of his prominent characteristics. He was respected by all in the hospital, and a favorite with his associates.

There were at that time in the hospital six internes, of whom two were medical and four surgical. Two of the six, Doctor Hayward and Doctor Allen, have died, and three of the others



have retired from practice. At the banquet which you all gave to Doctor Allen, on his return from the trip around the world, three of us had the pleasure of being present, and of witnessing the cordial reception which awaited him in Cleveland. This, of course, gave us all great satisfaction.

As we all know, Doctor Allen's kindly thought of others was one of his characteristics, and many of you must have had abundant opportunities of witnessing it. One instance of this was shown before the dinner just referred to. He took the pains to have a bouquet of roses delivered in Boston, on the evening of the dinner, to the wife of his former associate, Doctor Hayward, who had died some years previously. One of his well-known kindly letters went with the flowers. He wanted the wife to know that on that occasion of festivity he had not forgotten his old associate.

When our hospital year was over, most of us, Doctor Allen included, went abroad. Doctor Allen was naturally desirous of learning foreign languages, so that he might profit from the lectures and clinics which he expected to attend in the various centers. For this reason he went by himself, in order that he might more rapidly acquire a familiarity with the foreign languages without being obliged to hear English and to speak it. It happened that Doctor Bullard and I went to Dresden to learn German, and, having made inquiries at the banker's there as to where we might live, and at the same time be instructed in German, and have practice in hearing, speaking and reading it, we were recommended to the house of a certain Professor Manitius, who, we were told, could take us into his house and give us the needed instruction and opportunity to practice. As we were told that there was no other English-speaking person in the house, we went there at once, made arrangements with the professor, and took the room assigned to us. Then, thinking to take a walk, we went together into the entry, where, to our surprise, we met Doctor Allen, who had also come to that house especially for the reason that no English-speaking person was to be there. Although he was, I am sure, disappointed, in a way, at the failure of his efforts at being alone, his pleasure at seeing us at once replaced that feeling, and from that day we were all glad we had thus come together.

Many were the excursions we took together, sometimes riding or driving, but always, when possible, on foot. He was ever on such occasions the prince of good company, and kept us all in a merry mood.

Many times after this he and I were together at various places in Europe, but especially in Vienna, and I always found him the same delightful companion and true friend.

Though his interest in professional affairs left him comparatively little time for outside things, he always found an opportunity to indulge his taste for music and for art, and many times we went together in search of the one or the other.

During all the years since our return to America Doctor Allen and I, though living in cities far apart, have kept in as close touch with one another as has been possible under the circumstances. Many a time I have attended a meeting in another city, largely because I thought it likely that he would be there, and I have reason to believe that I was not the only one who acted on that impulse.

On such occasions he was one of the important personages, and for one purpose or another his services were always in demand. His versatility at such times was greatly in evidence, for he was equally at home and equally successful whether he was the presiding officer at a professional meeting or the toast-master at a feast. I remember that on one occasion, when the American Surgical Association was entertaining at dinner Professor Trendelenburg, Doctor Allen was toast-master. Trendelenburg sat at his right, and the next to Trendelenburg sat Doctor Keen, of Philadelphia. Toward the end of the dinner Doctor Allen, in introducing the guest of the evening, made many complimentary references to him, with here and there a light touch of humor. He spoke a good deal about the "Trendelenburg Position," and finally called upon Trendelenburg to say something in defense of his "position." Trendelenburg stood up, and, after bowing to the right and to the left, slowly said in broken English. "I want to say that, as I am now between Doctor Keen and Doctor Allen, my position satisfies me entirely." Although this witty and complimentary reply was from the guest of the evening, it was in a way Doctor Allen's humorous speech which elicited it.

Concerning the main part of Doctor Allen's life since he settled in Cleveland, you all know much more than I, and it gives



me a great deal of pleasure to think that you are now uniting to pay this tribute to his memory—a tribute which all must feel is well deserved.

Believe me, my dear doctor,

Sincerely yours,

GEORGE H. MONKS.

---

*Doctor Sawyer:*

The man whom you remember this evening was a man whom we feel had made himself known, had made himself felt throughout the land. For many years his voice was heard and his influence potent in professional councils, professional meetings, professional gatherings of all kinds. Among the men whom he loved to meet were several whose names are familiar, whose teachings he has exemplified to many of us here, and whose influence upon professional advancement has been great, and with whom he loved to work.

The name of the next speaker is one that needs no introduction. Doctor Deaver is a friend of Doctor Allen, and a man himself distinguished throughout the land. Doctor Deaver.

---

*Doctor John B. Deaver:*

Mr. Chairman, Ladies and Gentlemen: When your chairman asked me to join you in this tribute to the honored dead, it was his desire that I should speak of the contributions of our departed friend to the medical sciences—of his position as a surgeon.

But I am loath to dismiss this opportunity to add my word of appreciation for the genuine personal worth of Doctor Dudley P. Allen, the man. In this day the homely virtues of intellectual honesty, scientific truthfulness, faithfulness to duty, and the moral obligations in their broadest conception between men, are too often forgotten in the quest for success that can be measured only in material things. If one subjects to analysis the life histories of medical men “whose distant footsteps echo down the corridors of time,” he becomes at once impressed with the existence of an immutable law between attainment and high moral qualifications. It is an unfortunate trend of the times to disregard the old-time conception of the profession of medicine as a “calling” and therefore, a sacred duty. Medicine has become dangerously commercialized, and you may seek, but in

vain, in the marts of commercialized healing for that justification of the faith reposed by the people in the "doctors of the old school."

But we must not blind ourselves to the inaccurate and careless methods often employed by physicians of forgotten days; accustomed as they were to the limitations in the fund of knowledge then extant. Lacking in the diagnostic and therapeutic measures, now universally used, they were slow to accept the innovations which have since elevated modern surgery to its high plane of perfection. But our judgment should be tempered with the realization that the profession, as a whole, made a far greater advance during the days of which we speak than in any preceding era of medical history. Nor need we forget that nobility of character, typical of the old-time physician that enabled him, as did St. Luke, the beloved physician, to minister alike to the body and to the soul. The one in whose memory we are gathered together tonight was a novitiate in medicine in the transitional stage between an old and a new surgery. The Listerian principles, it is true, had been universally adopted, and the great fundamental groundwork of this new specialty had become firmly established. It merely remained to teach the profession at large the practical side of the newly "refined" science, and to train young men in the actual application of "modern" surgical technique. Allen was fortunate in the time of his entrance into medicine, for it was, as we have stated, in the early developmental stages of surgery, and while he became a leader in its purely technical side, he likewise retained the best traditions of the old-time physician whom many today would do well to emulate.

The years have proved his steadfast devotion to the improvement of his chosen specialty, the precepts of his professional life have added lustre to American medicine, while his influence with the students who came under his charge, his large clientele, his associates, and the world at large, has been far greater than mere surgical dexterity and skill could ever wield.

True success is a process of very gradual evolution. The commanding heights in the practice of medicine are reached only by the few whose innate qualifications in mind and body, together with the opportunities of a thorough training, and inspiring associations in their early professional life, conduce to the development of characteristics demanded of the active surgeon and



teacher. The subject of our sketch was not only richly endowed with nature's gifts, but the opportunity to apply his talents was early afforded him in this city, where practically his entire professional life was spent.

The foundation of his learning was laid during his collegiate days at Oberlin College, and later in the Medical School of Harvard University, from which he graduated with the class of 1879. Doctor Allen was singularly well prepared for his life work, for while a considerable number of young physicians in those days had had academic training in preparation for the medical course, the great majority of students came from the hamlets, villages or smaller towns with no further preparation than the local schools afforded.

The successful life of this great teacher and surgeon serves to illustrate the soundness in principle of our recent attempt to raise the educational requirements of prospective students of medicine. We are all cognizant of the many arguments that can be given for and against the long period of study demanded of the student of the present day; you have heard the plea for that democracy that will not deny the poor man the opportunity to acquire a medical education, but the time has never been, is not now, and I hope never will come when the man with the proper inspiration cannot follow the vocation of his desires. We want to eliminate the weaklings, who in the past became the goats among the sheep in the medical field.

Doctor Allen came to this city with the mental equipage equal to that of graduates of our best schools with the higher requirements of the present day, and with advantages far greater than those of the average young man of his time. Minerva Medica must have whispered to the young surgeon the same promises that Doctor Weir Mitchell tells us she gave to Agnew, the greatest of all American surgeons, in the springtime of his surgical career:

"But I will take you where the great have gone,  
And I will set your feet in honor's ways;  
Friends I will give and length of crowded years,  
And crown your manhood with a nation's praise."

Doctor Allen lived to see the fulfillment of each one of these promises.

After graduating from the Harvard Medical School he spent a profitable year as resident surgeon in the Massachusetts

General Hospital, an institution which has given and continues to give many leaders to the medical profession of this country.

After continuing his studies abroad for a period of three years, Doctor Allen returned to this country in 1883 and immediately established himself in practice in this city. One year later, the fifth year after his graduation from the Harvard Medical School, we find his name among the surgeons of the Cleveland Charity Hospital, and it was in this institution that his first actual experience in operative surgery was gained. It is evident that the young surgeon was improving his opportunities, for in June of the year of his election to his first hospital position he reported the interesting cases that had come under his observation, before the State Medical Society of Ohio. This paper, which is probably his first contribution to the medical literature, is noteworthy, not alone because of the scientific aspects of his presentation, but rather because it gives us an insight into the character of the man—at that time a beginner in surgery.

"The cases of abdominal section presented in this paper have been selected not to show brilliant results, but rather, difficulties in operation."

This introductory sentence reveals the truthfulness in his writings, for while the results attained in the five cases mentioned were undoubtedly brilliant for the times, they lacked that perfection which he aspired to in all of his surgical work.

The article is concluded with a brief discussion of the principles of antisepsis which was being universally adopted about this time. Doctor Allen had evidently established for himself a position in the best medical circles of Cleveland, and in 1886 the crowning opportunity of his career came in his election to the staff of the Lakeside Hospital. This institution, of which you may be justly proud, was at that time small, unorganized and undeveloped. Today it is known the world over as a model of efficiency, the surgical center of one of the finest States in the Union; the home of progressive surgery—it is a monument, ladies and gentlemen, to the late Dudley P. Allen.

With the growth of this institution his abilities as a surgeon and organizer became universally recognized, so that his election in 1893 to the Professorship of the Principles and Practice of Surgery in the Western Reserve Medical College, came as a logical sequence to his efforts in the development of this now excellent school. We will not stop to dwell at length upon the



efficient discharge of the difficult duties of this position during his long term of office, but let us not forget the part he played in the education of the American physician of today.

Doctor Allen's standing in the surgical world must be judged by his ability as a hospital organizer, as a teacher of surgery and operator, and by the inspiration of his personal contact. His contributions to medical literature consisted chiefly in addresses and articles for journals, important articles with which we are familiar, and which treat of a wide range of subjects, but especially in the domain of abdominal surgery. Prolific contributions to surgical literature is not a characteristic of the class of surgeons of which Doctor Allen was a leader—the essentially practical man. His several writings invariably deal with the subject from the viewpoint of the clinician. As a successful operator he was naturally interested in the development of the technical side of his art, rather than of the theory, and not a few of his literary efforts deal with anesthesia, asepsis and post-operative treatment.

Dudley P. Allen will always be remembered in this community as a highly successful practitioner of surgery; his reputation abroad will endure as an inspiring teacher of surgical principles, as the leading spirit in the development of an excellent medical school and hospital, and finally, as a leader in the societies devoted to the improvement of his specialty.

Few men have merited and received greater honors. A Trustee of Oberlin College, recipient of the Master's degree in 1883, and of the Doctor's degree in 1908; throughout his entire life he was vitally interested in the fortunes of his Alma Mater. Elected to membership in the American Surgical Association in 1894, and to the secretaryship of the society in 1901, he became its president in 1906.

Doctor Allen was one of the secretaries of the International Medical Congress which was held in Washington a number of years ago. As president of the Medical Society of the State of Ohio in 1892, and of the Cleveland Medical Library Association, from 1903 to 1906, he served the most important organizations of his own city and state.

With contributions of money and of his more valuable time, he placed the Physicians' Library of Cleveland on a practical working basis, and with continued growth and prosperity it has become one of the important collections of medical books in this country.

During the past year Doctor Allen was elected to honorary fellowship in the American College of Surgeons, a distinction worthy only of the greatest of our profession. The successes he achieved were the result of patient industry and untiring application, and they should inspire others to follow in his professional footsteps. And, for those who would live their lives in the image of the man whose loss we keenly feel tonight, the ideal must be to so live that the final judgment of their associates will be that which we can say of Dudley P. Allen, as Napoleon said of the great French surgeon, Larrey: "He was the best man I ever knew."

It was my privilege and good fortune to have had a close association with Doctor Allen. No one had a higher regard for him than the speaker. Doctor Allen's genial personality made him beloved by all who came in contact with him. His gentlemanly manner and genial smile inspired his patients with the confidence so essential to the welfare of the afflicted, if the best results are to be had.


Doctor Allen's acuteness made him the keen diagnostician that he was. In debate he was clear, and spoke to the point. His very large experience gave him a broad grasp of the most important surgical subjects which made him much sought after as the ideal consultant.

Doctor Allen's product was finished work and able men. His students felt the impress of a mind inspired by the dignity and serious character of surgical work. He was one of those rare men who, having abundant opportunities to take for themselves, chose rather to give of themselves for the benefit of others, and while naturally somewhat reserved in outward appearance, the inner complexion of his mind, revealed to those whose good fortune it was to know him well, in the course of his lifetime gained for him a host of friends. Like Abou ben Adhem, we may write him "as one that loved his fellowman." If "love is the fulfilling of the law," Doctor Dudley P. Allen may be classed as one of the elect, for he both gave and received.

---

*Doctor Sawyer:*

I am sure we are all very glad to have been here this evening, and are grateful to those who have directed our thought.





**ANNOUNCEMENT OF LECTURES TO BE GIVEN IN  
CLEVELAND UNDER THE McBRIDE FOUNDATION  
BY PROFESSOR ARTHUR KEITH  
OF LONDON**

On March 19th and succeeding dates Professor Arthur Keith, M. D., LL. D., F. R. C. S., F. R. S., is to give a series of lectures at Adelbert College on the "Antiquity of Man in the Old World and the New." Many members of the Academy were present at the Symposium on December 11th last, thereby giving great encouragement to the work of the Department of Anatomy. But that symposium was merely an introduction to the subject. It could not presume to vie with such a course as Cleveland is shortly to receive under the terms of the McBride Foundation. Doctor Keith has devoted many years to the study of this problem. He has a world-wide reputation in Anthropology, is a facile speaker and a brilliant lecturer. Western Reserve is to be congratulated on securing Doctor Keith's services at the present time.

The lectures are not exclusive. They will not be delivered in technical language. They are open to the public at large. The training undergone by all medical men naturally gives them an interest in such subjects as the History of the Human Race, and it is hoped that as many as can, will avail themselves of the opportunity of hearing the Anatomist who has charge of the celebrated Hunterian Museum in the College of Surgeons, London, and of making his visit a success.

It is confidently predicted that all who can spare the time to attend the lectures will feel satisfied that the hours have been well spent in listening to the able presentation of the subject which Doctor Keith is certain to give.

The following is a syllabus of the course:

---

**LECTURES ON THE ANTIQUITY OF MAN**

**By ARTHUR KEITH, M. D., LL. D., F. R. C. S., F. R. S.**  
Hunterian Professor, Royal College of Surgeons, England, President of  
the Royal Anthropological Institute of Great Britain and Ireland, etc.

---

**March 19th. Lecture I.**

On account of the discoveries of last century which led to a revolution in our conception of Man's Antiquity. Later discoveries which gave rise to the belief that Modern Races of Man are of comparatively recent origin.

**March 20th. Lecture II.**

The discovery of ancient man at Galley Hill, Kent, England, and the bearing of that discovery on the antiquity of the Modern Type of Man. The proof that in very ancient times there existed distinct species or genera of men.

**March 23rd. Lecture III.**

The recent discovery of an extinct form of man at Piltdown, Sussex, England. The problem of reconstructing a prehistoric type from fragments of the skull. The antiquity of the Piltdown type compared with that of other ancient human types.

**March 25th. Lecture IV.**

The Antiquity of Man in America. The importance of America as a field for prehistoric research.

**March 26th. Lecture V.**

The manner in which European Anthropologists are attempting to solve the problem relating to the Origin and Evolution of Man and some of the conclusions which they have reached.

The first lecture will be given in the Amasa Stone Chapel, Adelbert College, March 19th.

*The first lecture will be given in the Amasa Stone Chapel, Adelbert College, March 19th.*

---

**The Advertising Policy of the American Journal of the Medical Sciences.**—"The *American Journal of the Medical Sciences* is, with one exception, the oldest medical journal in the United States. For nearly 90 years it has recorded the progress made in medicine, not only in this country, but also abroad. Few journals in the United States have for so long held such a high place in the regard of the best men in our profession. No journal has presented in its reading pages material of a higher grade of scientific excellence. In this respect it has been a star of the first magnitude in the medical literature in America. With one exception it has always stood for the highest ideals in medicine. This exception has been in its advertising pages. While these have not at any time been of such character as to deserve serious condemnation, at the same time they have been used to promote preparations that were not creditable to American medicine. This, undoubtedly, was due largely to a theory, not only in medical but also in lay journalism, that there is a separation of the literary pages from the advertising section that absolves the editor from all responsibility for the latter. Now even this exception is removed; for, while no regular announcement has been made in the journal itself, we understand that hereafter no advertisements of proprietary medicines will be admitted to its pages that have not the approval of the editor. The publishers of the *American Journal of the Medical Sciences* are to be congratulated on the advanced stand they have taken; it means much to scientific medicine to have this journal aid in the efforts that are being made for more rational therapeutics in this country."—*J. A. M. A.*



## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. McGEE, M. D.

**Aconite:** William Hanna Thomson, in the *American Journal of the Medical Sciences*, contributes an article on the action of aconite as a vasodilator. One of the important questions in modern therapeutics is how to regulate arterial blood pressure, particularly when it rises above normal. Morbid conditions due to high pressure are very numerous, and equally varied in their causation. We should therefore readily recognize it when present, and be fully aware of its special dangers in each case. The commonest drugs employed heretofore to lower blood pressure are the various preparations of the nitrites, such as amyl nitrite, nitroglycerin, potassium nitrate, and erythrol tetranitrate, named in the order of the duration of their action. The type of them all is amyl nitrite, whose action is so rapid that it is used only in sudden emergencies, as in angina pectoris. But the chief objection to amyl nitrite is that its action is not only sudden, but very evanescent, which applies also to all nitrites when the conditions of disease for which vasodilators are indicated are taken into account. His objection to all nitrites is that their vasodilating effects are too transient, the most prolonged, that of erythrol tetranitrate, lasting for less than an hour, which is by no means sufficient for such a permanent morbid condition of general arterial contraction with heightened blood pressure as is present in chronic interstitial nephritis. After an experience of years in its use for this purpose, he regards aconite as the most efficacious vasodilator we possess when given systematically in small doses. Aconite thus administered at once reduces blood pressure, produces a full and compressible, and greatly increases the percentage of elimination of urea in interstitial nephritis. The most important action of aconite when given in interstitial nephritis is to increase the elimination of urea. He found in a series of cases that that the elimination of urea in a large proportion of these cases was increased to double, and in two cases to three times the amount previous to the administration of the aconite. He has given as much as ten drops of the strong tincture of the pharmacopoeia of 1890 (35 per cent) four times a day with excellent results in the reduction of the pressure. In one case, with the symptoms of heightened blood pressure, shortness of breath, anginose pains, attacks of dizziness, et cetera, in a woman seventy-five years of age, these symptoms, formerly very troublesome, have by the use of aconite practically disappeared for twelve years by taking the aconite three or four times a day, and she remains free from them provided she does not omit the aconite. Another case was that of a well-known physician, aged sixty years, somewhat fleshy, with a large chest, a blood pressure of 185 mm., who had severe attacks of anginose pains, which passed down the left arm to the wrist, waking him about 2:00 A. M. He was treated with the 10 per cent tincture of aconite, 15 drops, with 5 grains of sodium iodid, t. i. d., whereupon all his symptoms improved, and his blood pressure dropped from 185 to 160 mm. After continuing this line of treatment for two years, he reduced the aconite to only 10 drops, with an entire disappearance of his old symptoms. The beneficial effects of aconite are particularly pronounced in mental derangements of the nature of melancholia, with high blood pressure. He cites several cases of melancholia and maniacal conditions greatly benefited by this drug. He, as a teacher of materia medica, has insisted upon the fundamental difference between functional and organic or constitutional medicines. Functional medicines like aconite or opium produce their whole effects in one dose, and however often repeated, the effect of the last dose is no different from the first. Organic or constitutional remedies, as iron in chlorosis, or mercury in syphilis, produce effects by the cumulative action of many doses. Therefore the proper dose of a functional medicine is not reached till it causes its own symptoms. In one case of maniacal melancholia he was obliged to give 180 drops in three hours, because any less quantity would have produced no effect..

**Calcium:** S. E. Earp, in the January number of the *American Practitioner*, comments editorially on the salts of calcium. Perhaps it is charitable to conclude that the reason for the terms calcium and lime being used interchangeably is due to thoughtfulness. He can call to mind very few elements whose salts have proved so reliable and important as those of calcium. The older forms are familiar agents, yet we know that the chloride and lactate have some new avenues of usefulness. For instance, to increase the coagulability of the blood, He used the calcium chloride, however, in the hemorrhage of typhoid fever at the Indianapolis City Hospital twelve years ago, and in pulmonary hemorrhage also. He now, however, prefers the lactate, as the stomach accepts it more kindly. Perhaps, in addition to increasing coagulability, it may also act as a neutralizer to hyperacidity. We cannot doubt its efficiency in hemophilia and in some cases of urticaria as a prophylactic. In certain forms of albuminuria he recognizes its importance, although he rather prefers the lactate of strontium, as by its use there is an absence of albumin in functional albuminuria, and he has seen some benefit even in the organic type. We are aware that too long continued use of the calcium salts or their use in too large doses in hemorrhagic cases will produce the condition we are trying to combat. In such conditions as scurvy, enteritis, gastric hyperacidity, pancreatitis, and as a prophylactic in bronchial asthma, the calcium salts have given favorable results. So far as he knows, Robeson was the first to suggest the use of lactate of calcium as a prophylactic in surgical operations where postoperative hemorrhage was feared. Recently White reports on its value in certain dermatoses, as erythema multiformis, urticaria, chilblains hyperidrosis and purpura rheumatica. While not considering lactate of calcium a specific, he believes this agent should be given a thorough trial. Forshheimer takes the view that the general problem of calcium metabolism should receive attention, especially in regard to thymus or parathyroid disease, and also in relation to the acids of the gastrointestinal tract. Certain epilepsies appear to be benefited by the use of the calcium salts. Doctor Thomas J. Beasley, of Indianapolis, has advocated the use of calcium intravenously in tuberculosis, and his work in this line for nearly six years shows a promise of success. His preliminary report in the *Indianapolis Medical Journal* for January certainly indicates that this method possesses value.

**Radium:** In the *New York Medical Journal* for January 9, Walter B. Chase believes, with others, that operative surgery has approximately reached the limit of its curative and palliative efficiency in the treatment of cancer. This state of affairs forces us to any new method which brings new power to conquer this hideous ailment, and so we turn to radium for any aid it may offer. The scope of radium therapy is a question the profession and the laity desire to be answered, and it should be judged by fair and unprejudiced methods of investigation, study and observation. His conclusions are: (1) The destructive power of radium on cancer cells is well established. (2) The employment of radium in cancer is not in conflict with surgery, but both possess distinctive fields of usefulness, each having its limitations; they are supplemental to each other, and there is ample opportunity for co-operation and reciprocity. (3) Large operable growths should be removed by the knife. (4) The analgesic power of radium is one of its most precious properties. (5) Want of confidence in radium arises from the use of low grades or spurious products, and from want of skill in its application, together with the exaggerated, conflicting and false reports so constantly current. (6) Postoperative radiation is of great usefulness, and rapidly coming into professional use at home and abroad, being commended by prominent authorities, who not long since were unconvinced of its curative and palliative powers. (7) Crossfire applications of radium increase its



efficacy, and aid by its multiple application in securing deeper penetration of large areas than by ordinary methods of application. (8) As in surgery, so in the application of radium, disappointment is likely to follow too optimistic expectations of recovery. (9) In proportion as metastasis is present the chances of cure diminish, and in turn delayed diagnosis is often responsible for metastasis.

---

**Dysmenorrhea:** In the *Journal A. M. A.* for January 9, Emil Novak writes concerning the atropin treatment of dysmenorrhea. The use of atropin in the treatment of spasmodic dysmenorrhea is based on the fact that atropin diminishes the irritability of the autonomic nerve endings in the uterus. In 1910 Drenkhahn reported remarkable results from the injection of a solution of atropin directly into the cervical canal (1 mg. of atropin in 1 cc. of water). If a speculum or syringe be not at hand, he advises the introduction of a tampon saturated with the atropin solution (1 per cent strength). This plan Drenkhahn states he had followed for fifteen years, basing it on the experimental work of Schindler, who showed that atropin has a direct action on the uterine muscle. The method was taken up by Novak, of Vienna, who administers the atropin in pills containing 0.5 mg. (1/128 gr.) each, three being given each day, beginning just before the expected onset of menstruation. His preference for the administration by the mouth is a wise one, for the results are just as satisfactory as by Drenkhahn's, and he avoids the slightest danger of infection of the latter. Novak's method is less disagreeable, especially in the cases of virgins. Thirty-eight cases were reported, in thirty of which the results were distinctly favorable. In the thirty favorable cases the pain either disappeared entirely or else became insignificant. Novak is inclined to believe that failures, when they occur, are due to insufficient dosage. The experience of Emil Novak has been most encouraging in spasmodic dysmenorrhea by means of this drug. In cases of young unmarried women with the classic picture of spasmodic pain recurring with each menstruation, the atropin treatment is indicated without pelvic examination. He follows the plan of Novak, though often in larger doses. He begins the use of the drug about two days before the expected menstruation and continues it until the second or third day. He gives it alone in tablet form, has had no bad after effects, other than the occasional effect of overstepping the patient's tolerance of the drug, and from some thirty cases believes it of value when this condition exists.

---

**Bacterins:** B. A. Thomas, in the January number of the *Therapeutic Gazette*, presents the status of bacterins and tuberculins. An extensive experience has strongly convinced him that bacterin therapy in the hands of the general practitioner is not destined to realize the fulfilment of its promise. It seems not to be appreciated by physicians generally that bacterins are agents capable equally for good or for evil. Careless, ignorant and incompetent administration not only discredits an otherwise valuable remedy, but deprives the patient of his natural resources for recovery. Two solutions for the problem are offered: either the general practitioner contemplating treatment by bacterins should familiarize himself more with immunology, including bacteriology and laboratory methods, or he should refer his patient to or co-operate with an immunologist, precisely as he is accustomed at times to consult an ophthalmologist. No physician would sanction for a minute the use of digitalis, strychnin or morphin without a knowledge of the pharmacodynamical effects of these drugs; yet he hesitates not to order from his drug store a "vaccine," and proceeds with its administration, knowing little or nothing of the physiological effects of biological products. Theoretically, bacterin therapy is indicated only in chronic or possibly also subacute localized infections; it is impossible to conceive by any stretch

of the imagination the rationale or at least the necessity of their employment in acute or diffused affections in which the human organism is already overloaded with the products of a living antigen, or indeed its defenses actually demolished, and its system overwhelmed by the invading microbes, namely, such states as bacteriemia or septicemia. Other causes of failure by those practicing bacterial inoculations are: (1) Utilization of the improper bacterium, whether autogenous or heterogenous; (2) routine employment of stock instead of autogenous bacterins; (3) ignorance as to administration, either size of doses or intervals of inoculation; and (4) disregard of commonly associated conditions. A fact of much importance in the preparation of a bacterin, whether autogenous or stock, is that it should not be overheated, thereby interfering with its properties of immunization. Many failures in bacterin therapy result from improper administration. The doses given are either too large or too small, more frequently the former. The dose must be cautiously gauged by the age of the patient, the nature and gravity of his illness, the acuteness or chronicity of the affection, a nonfebrile or febrile condition, and his debilitated or toxic state. The golden rule to follow is, the sicker the patient, the smaller should be the dose. Generally speaking, the clinical symptoms are of primary importance, and the index takes second place; at times, however, these become reversed. The safest rule to be observed respecting bacterin therapy controlled only by clinical symptomatology is to begin with a very small or assuredly harmless dose. If there be absolutely no reaction, local or general, in two or three days, a second inoculation twice the size of the first may be given, and so on with intervals of three to seven days until reactionary phenomena are observed; the slightest reaction is evidence that the dose has been sufficient if not too large, and indicates that no further inoculations are to be made until all signs of reaction have completely subsided for several days; frequently the next inoculation must be deferred for two or more weeks, and when given should not exceed in size its predecessor, commonly consisting of only one-half of the previous dose. Among other causes of failure in biological therapeutics may be mentioned, disregard of associated conditions, both general and local. He has tried to impress forcefully the fact that bacterin therapy, for the fullest realization of its remarkable benefit to mankind, had best be restricted to and conducted by expert hands.

---

**Emetine:** In the *Medical Record* for January 10, Joseph Weinstein presents a clinical report of the successful use of emetine in the control of hemorrhage following naso-pharyngeal operations. He reports 12 cases in which success followed its use, and while not claiming that the drug will control all such cases of hemorrhage, invites his fellow-workers in this field to co-operate with him in trying out the remedy. Pelletier in 1867 separated from ipecacuanha its emetic principle and named it emetine. In 1894 Paul and Cownley isolated its two crystalline alkaloids, emetine and cephaeline. Since then emetine has been most successfully employed in several fields of medicine. Many have proved its worth in amebic dysentery, and Rogers has also demonstrated its uses in cases of amebic hepatitis, and with others its value diagnostically, the true amebic dysentery reacting to emetine within three days after its injection hypodermatically. Renault recently employed it in the treatment of cholera, obtaining in a severe epidemic 73 per cent of recoveries. It has also been used successfully in the hemoptysis of tuberculosis, for hemorrhage in typhoid, and in uterine hemorrhage following cancer. It has been employed successfully in obstinate nosebleed and in persistent hemorrhage from the gums. In 1914 Barrett and Smith demonstrated its use in pyorrhoea alveolaris, and also that used subcutaneously it is likely to prove curative in many cases of tonsillitis. This report seems to thus far be the first as to the use of the drug in nasopharyngeal sur-



gery. The action of emetine upon hemorrhage has not as yet been satisfactorily explained. It does not coagulate the blood, nor lower blood pressure, but apparently acts directly upon the capillaries by closing them. In the 12 cases reported by Weinstein, one-half grain of emetine hydrochloride was used half an hour previous to operation; in the remaining 11 it was given immediately after operation.

---

**Scopolamin-Narcophin:** In *American Medicine* for December, A. M. Hilkowich presents further observations on scopolamin-narcophin anesthesia in labor, with a report of two hundred cases. Narcophin is a synthetic preparation of opium discovered by Straub, and consists of a chemical combination which contains to each molecule of meconic acid, a molecule of morphin and a molecule of norcotin. At the Jewish Maternity Hospital scopolamin-narcophin was first used during labor about four months ago. His conclusions are: (1) Scopolamin-narcophin narcosis during labor, when properly used, has no danger for either mother or child. (2) The patient, in her "twilight" state, should be constantly and carefully watched by a trained nurse and experienced physician. (3) Pulse, temperature and respiration of mother and fetal heart should be carefully examined, especially before each injection. (4) Amnesia can be obtained in 85 per cent of the cases, analgesia in almost all the cases when used in time. (5) The first stage of labor is not prolonged. (6) The second stage is slightly prolonged. (7) Perineal lacerations are lessened by its use, and the use of forceps is reduced. (8) Cardiacs are benefited by "twilight." (9) "Twilight sleep" does not interfere with any operative interference which may be found necessary in order to terminate labor. (10) There is absence of shock and exhaustion, and the puerperium is favorably influenced by it. (11) It is best suited for hospital practice; when used in private homes, proper surroundings and assistance should be provided. (12) There is no uterine hemorrhage caused by this method.

---

**Skin Grafts in Ulcers.**—A report of fifty cases of ulcers treated by skin grafts in the Johns Hopkins Dispensary is given by J. S. Davis, Baltimore. The grafts are kept in position by placing overlapping strips of rubber protective, or a sheet of paraffin mesh, and securing this and the overlying gauze dressing with numerous strips of adhesive plaster. Over this is placed again more gauze and a snug gauze bandage and finally a muslin or crinolin bandage. Sometimes with these, thin strips of splint wood were incorporated with the dressings, so as to insure the perfect rest required, and still allow the patient to go about his daily occupation. All the grafts were autografts, small, deep grafts being generally used. When placed close together sometimes the ulcers were covered with epithelium within a week. Sometimes when a partial grafting was done or when only a portion of the grafts were successful, a second grafting was required. In some cases, several successive graftings were ineffective, but several of these cases were subsequently successfully grafted as hospital patients. The failures were mostly confined to the feet and legs, and no case of actual recurrence has been observed on the same site in patients successfully grafted. Davis feels that these results in ambulatory cases will make for hospital economy and add materially to our resources in out-patient cases.

## NEW AND NONOFFICIAL REMEDIES

During January the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Hynson, Westcott & Co.: Glycotauro Capsules (half size).

Eli Lilly & Co.: Alcresta Ipecac Tablets.

Merck & Co.: Cantharidin, Merck.

H. K. Mulford Co.: Luetin.

Since publication of New and Nonofficial Remedies, 1914, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Cantharidin—The anhydride of cantharidic acid preparations of cantharidin are used in place of corresponding preparations of cantharides and have the advantage of being cleanly and more uniform in strength. A 0.1 per cent solution of cantharidin in a fixed oil raises blisters when kept in contact with the skin (*Jour. A. M. A.*, Jan. 2, 1915, p. 53).

Benzene, Medicinal—A liquid consisting almost entirely of benzene,  $C_6H_6$ . Medicinal benzene has been used in the treatment of leukemia. In many cases the improvement is such as to suggest an apparent cure. A large number, if not all, cases relapse or succumb to the toxic action of the benzene. The drug is in the experimental stage and should be used with caution (*Jour. A. M. A.*, Jan. 2, 1915, p. 54).

Benzene, Merck, H. P. Crystallizable—A brand of medicinal benzene. Merck & Co., New York (*Jour. A. M. A.*, Jan. 2, 1915, p. 54).

Leucocyte Extract—An extract of leucocytes obtained from exudates produced in the pleural cavity of rabbits or other animals. It is said to be of value as an aid to specific serums or antitoxins and vaccines. It is claimed to be of use itself where the nature of an infection is not known. Its use is in the experimental state (*Jour. A. M. A.*, Jan. 2, 1915, p. 54.)

Leucocyte Extract, Squibb—A leucocyte extract prepared according to the method of Hiss. It is sold in syringes containing 10 c. c. E. R. Squibb & Sons, New York City (*Jour. A. M. A.*, Jan. 2, 1915, p. 54).

Silver Citrate, Merck—A brand of silver citrate admitted to New and Nonofficial Remedies. Merck & Co., New York (*Jour. A. M. A.*, Jan. 2, 1915, p. 54).

Silver Lactate, Merck—A brand of silver lactate admitted to New and Nonofficial Remedies. Merck & Co., New York (*Jour. A. M. A.*, Jan. 2, 1915, p. 54).

Digitoxin, Merck—A brand of digitoxin admitted to New and Non-official Remedies. Merck & Co., New York (*Jour. A. M. A.*, Jan. 2, 1915, p. 54).

Luetin—An extract of the killed cultures of several strains of the *Treponema pallidum*, the causative agent of syphilis. It is employed for the diagnosis of syphilis. It is of use in the examination of tertiary cases, but rarely gives a positive reaction in primary cases or in untreated secondary cases. Luetin is supplied as:

Luetin, Mulford—Packages sufficient for a single test, for five tests and for fifty tests. The H. K. Mulford Co., Philadelphia (*Jour. A. M. A.*, Jan. 23, 1915, p. 343).

Glycotauro Capsules (half size)—Each capsule contains Glycotauro (see N. N. R.) 0.15 Gm. Hynson, Westcott & Co., Baltimore, Md. (*Jour. A. M. A.*, Jan. 23, 1915, p. 343).



## The Academy of Medicine of Cleveland

### ACADEMY MEETING

The one hundred and sixteenth regular meeting of the Academy was held Friday, January 15, 1915, at the Cleveland Medical Library, the Vice-President, M. J. Lichty, in the chair.

The following cases were presented:

**1. Case of Aneurysm of Transverse and Descending Aorta, by R. K. Updegraff and A. W. Leuke.**

The patient, a man of middle life, had all of the clinical symptoms of aneurysm of the aorta. There was marked difference in the radial pulses. There was a variation of 55 mm. of mercury between the two. The most annoying symptom was pain, very severe and constant, which prevented the patient from sleeping. The man was operated, the aneurysmal sac wired. The symptomatic cure has been complete.

Therapy furnishes only a palliative cure. The operation in this case consisted of passing a trocar into the aneurysm, after which coils of silver wire were passed into the sac. The electric current was then applied for an hour, for the purpose of causing a clot to form.

W. E. Lower asked what the complications were in wiring, and how these might be prevented?

F. E. Bunts explained how one may get no blood when aspirating into an aneurysmal sac. One case which came under his observation was diagnosed by him as an aneurysm, while medical men declared that it was a sarcoma. An aspirating needle was inserted to prove the diagnosis, but no blood was secured. The man was given treatment for sarcoma. When he came to autopsy he was found to be suffering from aneurysm, the sac being filled with a firm, hard clot.

A. W. Leuke, in rebuttal, said that the use of gold wire is much more satisfactory in such cases than silver wire, because it coils better and has not as great tendency to descend. In the case under discussion, however, silver wire was used because gold wire was not available. In this case one loop of the wire descended quite a distance.

The regular program follows:

**1. Small Doses of Pituitrin in Obstetrics, by J. L. Bubis.**

The speaker declared that pituitrin is safe, works promptly, and can be given without danger in any stage of labor, if given correctly. The above conclusions were reached from a series of one hundred and fifty cases. It is best given intra-muscularly, into the biceps. The pains in every case began promptly, twelve minutes being the maximum. In one case, a primipara of 28, in whom the preparation failed to work, the pituitrin employed was found on examination to be inert.

The speaker first used the drug in doses of 1 c.c. The result of this dosage, in some cases, was tetanic contractions, however. The danger occasioned to the mother and child in such cases was too great. At the present time 2 to 3 minim doses are used, with perfect results.

Twenty-six of the one hundred and fifty cases were forceps deliveries, although the pituitrin worked well in each case. Pituitrin is valuable in breech cases, in dry birth and in the case of twins. In no case did infection of the arm follow the injection of pituitrin. Use of the drug is dangerous in mal-positions. After giving the patient pituitrin, she should never be left alone. The danger of postpartum hemorrhages should also not be forgotten.

K. E. Ochs, in opening the discussion, said that he had used the drug in about one hundred cases, almost always with good results. The patient should be partly anesthetized during the last stage to prevent laceration. The poorest results from pituitrin are multiparae with large, relaxed abdomens.

When the drug first came out it was used by the speaker in one case, 1 c.c. being given. Such severe pains ensued that the head became jammed on the cervix, which became very edematous and labor stopped. The patient had to be put under deep anesthesia before the cervix could be manually dilated.

J. J. Thomas regarded the use of the drug as no disadvantage. He obtained successful results from it in only two cases, however. In many of the cases reported are the results due to the small doses of pituitrin given, or to nature? It is not physiological to use pituitrin in the first stage of labor. It must serve to contact the cervix. Pituitrin sometimes causes tetanic contractions like ergot.

J. L. Bubis, in reply, said there were records of many cases in which pains started up immediately or very soon after the administration of pituitrin. Pituitrin does not act like ergot. It merely increases the normal pains.

## **2. The Inlay Bone Graft, with Stereopticon Illustrations Kindly Loaned by Doctor Fred Albee, of New York, by Walter G. Stern.**

The best tissues to graft are skin, bone and fascia. Skin has very great vegetative powers and takes well. When fat and fascia are transplanted into a joint, a tissue is formed which resembles synovial membrane. The fat and fascia do not live per se, but they set up about them a fibrous tissue reaction. If this be the case, the question has arisen, why use fat and fascia? Will not the reaction about a piece of pig's bladder be identically the same?

The status of bone, relative to transplantation, is by no means settled. Which part of the bone is responsible for bony proliferation? When bone is transplanted, does the bone live as such, or are the ultimate effects resultant from such transplantation due to the fibrous tissue metaplasia set up? Authorities say that bone must be transplanted to bone.

Bone for transplantation should be fresh, the living bone. Transplantation should include periosteum, bone and endosteum. For a transplant to do well it must be in contact with the healthy bone. The bone graft certainly stimulates active osteogenesis of the living bone. Some say that the autogenous grafts of skin are better than heterogenous grafts. The same is true of bone. Bone transplanted from other animals will not grow in man.

The technic of the bone graft consists in clearing out the debris from the proposed site of the graft. Bone taken from the most adaptable part of the body is shaped according to its future habitat. To chisel out the bone, is to leave the remainder of the bone very painful and sensitive. The bone is best removed by sawing it out, for by this method much of the after pain is obviated.

A. W. Leuke showed two cases on which bone graft had been done. The first case, a young man, had broken both radius and ulna several times, after the bones had been wired after the initial break. The bones were reunited by bone grafts and firm union took place.

The second case was a man past middle life, who had had his humerus broken in its upper part by a kick from a horse. The bone was reunited by bone grafts, and firm union took place.

---

## **EXPERIMENTAL MEDICINE SECTION**

The seventy-eighth regular meeting of this section was held Friday, January 8, 1915, at the Cleveland Medical Library, with T. Wingate Todd in the chair.



The regular program was as follows:

**1. On the Presence of an Anti-Sheep Hemolysin in the Blood of Guinea Pigs, by Harold N. Cole.**

Multiple anti-bodies, hemolysins, exist in normal serum. Thus there are normally diphtheria anti-bodies in the blood of some horses and men. The writer observed anti-sheep amboceptor three times in the blood of guinea pigs, in several hundred cases. In the preliminary titrations of the Wassermann, amboceptors were found in guinea pigs' blood. If this were to be used in the final stages of the reaction, the Wassermann test would be worthless.

In guarding against using serum of this sort it is to be remembered that the complement is thermolabile and the amboceptor is thermostable. The blood of guinea pigs does at times contain normal sheep amboceptor. After incubation for thirty minutes, if hemolysis occurs, then the amboceptor must be present. One of the best ways to prevent such a possibility figuring in the results is to use serum from two or three pigs. When this is done the amount used from each one is smaller, and thus the amount of the amboceptor, if such be present, is reduced.

H. T. Karsner, in opening the discussion, declared that the speaker had failed to emphasize the importance of his observations. In normal serum a group of amboceptors exist. Ehrlich and others have demonstrated these. The serum also contains bacterial and cell hemolysins and agglutinins. The existence of these bodies in the serum shows how important it is that workers should know the possibility of their presence. It also shows the value of having controls.

**2. Further Studies on Nitrogen Retention, by Howard T. Karsner.**

The problem to be studied is the effect on nitrogenous metabolism of the removal of varying amounts of kidney substance. Removal of one kidney is found to result in little change. The same is true of removal of three-fourths of the kidney substance. In the latter case, however, the animals wasted away in the later stages.

Removal of one-sixth of the kidney substance showed slight retention on the second day of non-proteid nitrogen, also slight decrease in output. In the blood, the level of the non-proteid and urea nitrogen remained about the same, although there is the normal variation in animals in captivity. Removal of one-half of the kidney substance showed slight increase in the nitrogen in the blood, and also in the nitrogen output. Removal of two-thirds of the kidney showed distinct but slight increase in the non-proteid nitrogen in the blood. After five days this returned to normal. These experiments are interesting, for in chronic nephritis there is a reduction in the amount of available kidney substance.

Removal of both kidneys showed a striking increase in the amount of non-proteid nitrogen in the blood. Two of the animals died in three days, one in four days. The blood of these animals showed from 227 to 285 mg. of nitrogen per 100 c.c. of blood.

Thus, viewing the retention of nitrogen in these cases, we can see that material reduction in the amount of kidney substance has little or no effect on the nitrogenous metabolism.

**3. Further Observations on the Etiology of Goitre in Fish, by David Marine.**

The writer has showed in previous communications that fish when fed exclusively on liver always develop goitre. On the other hand, when their diet is changed to sea fish, within thirty-five to forty days, the goitre always return to the colloid resting stage. It then occurred to the writer that if some of the fish were fed on fresh liver and others on liver which had stood long enough to become stale, the results might throw light on the substance or substances in the liver which might be held accountable

for stimulating the thyroid overgrowth. Perhaps these substances were toxins which developed in the food upon standing.

Accordingly, one lot of fish were fed on liver which was fresh, while another lot were fed on liver which had stood two days. Contrary to expectations, the fish fed on the fresh liver developed marked thyroid overgrowth, while those fed on stale liver showed progressive lessening. It is possible that the fish fed on the staler liver did not ingest as much, although both sets were given the same amount. Also, since the fish were fed in spring water, poor in oxygen, it is possible that the staler food, being partially digested by bacteria, does not need as much O for its consumption as the fresher liver. In other words, the fish eating the fresh liver might be suffering from asphyxia, and chronic asphyxia is a thyroid stimulant. Or, in the fresh liver, there may be a body which stimulates thyroid overgrowth, and which disappears from the stale liver.

J. J. R. Macleod, in opening the discussion, pointed out that the assumption of the existence of a state of chronic asphyxia as the explanation of the results noted was scarcely justifiable. Chronic asphyxia, if it exists for so long a time, shows various other manifestations. Did the fish in both lots take an approximately equal amount of food? What was their comparative weight?

David Marine, in rebuttal, said that the fresh and stale fed fish were the same size, although they had not been weighed. Relative to the amount of food taken, it is impossible to estimate this.

H. T. Karsner suggested that the weight of fish after two months' time is a fair criterion of the amount of food taken. In the livers of cats and dogs there is a bacillus, anaerobic, commonly present. Putrefaction in aseptic livers is commonly ammoniacal. Did the presence of amines have anything to do with the results?

David Marine said that the amines have nothing to do with thyroid overgrowth. The weight of animals can hardly be taken as an evidence of the amount of food ingested.

#### **4. Radicalism and Conservatism in Surgery of the Ear, Throat and Nose, with Lantern Slides, by Secord H. Large.**

Enucleation of the tonsils, so often performed, is radical treatment. The tonsils are closely related to the system of ductless glands. Of the cases referred to the speaker for this operation, it is found necessary in only about fifty per cent. The operation, if performed, should never be done before nine years of age.

Surgery of the nose is also tending to become more conservative. The treatment of the membrane in otitis media is too conservative, however. The treatment of mastoiditis is also too conservative.

W. C. Tuckerman, in discussion, cited the case of two children, upon whom medical examinations were entirely negative. Their ear drums were found on examination to be reddened. The membranes were opened, the pus evacuated, and the temperature immediately came down.

Hoarseness as a symptom should always receive consideration. The larynx should always be examined. Thus, two cases who recently came under the speaker's care, after long periods of treatment, were found to be beyond operative interference.

---

**Blood Vessel Reports.**—L. Eloesser, San Francisco, refers to a case in which hemorrhage of the femoral vein was stopped by tacking over the opening in the vein a piece of fatty tissue removed from the groin. The patient died twelve days later in a senile delirium and the necropsy showed the lumen of the vein to be free from clot and its walls smooth. The graft was adherent and not necrotic. He discusses the literature which he has found of similar cases, with treatment in like manner, and recommends free grafts of fat or fascia, sewn over defects in the walls of veins as a simple and safe substitute for suture, when the latter is impracticable.—*J. A. M. A.*



## OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The seventy-sixth regular meeting of this section was held Friday evening, January 22, 1915, at 8 P. M., at the Cleveland Medical Library. The chairman, Doctor J. E. Cogan, presided.

The minutes of the last meeting were read and approved.

### PROGRAM

#### 1. Presentation of Clinical Eye Cases, by Webb P. Chamberlain.

Doctor Chamberlain presented five cases:

(a) Man, 35 years of age, with a small tumor of the iris in the upper portion of the iris, about 4 mm. wide by 3 mm. in breadth. The eye has suffered several attacks of iritis. Past history negative. Wassermann reaction negative. Von Pirque negative. Probable diagnosis, malignancy.

(b) A man with blood pressure over 260, and the retinal arteries reduced to a fine streak.

(c) A patient with retinitis pigmentosa.

(d) A patient with exudate in retina and choroid very marked—has progressed some since observation. Wassermann negative. Diagnosis a question.

(e) A patient from whom a foreign body had been removed from the eye, with excellent results.

#### 2. The Use of Tropometer in Deciding and Prescribing of Prisms in Muscle Imbalance, by Edward Lauder.

Doctor Lauder's paper was very interesting. It was discussed by Doctors L. K. Baker, R. B. Metz and W. C. Tuckerman. Doctor Lauder brought out the important point that in prisms the prism should not be divided between the two eyes, as the tropometer often showed that the entire prism correction properly belonged before one of the eyes. He cited several cases in support of this contention.

#### 3. Presentation of Cases, by W. C. Tuckerman.

Doctor W. C. Tuckerman presented three interesting cases. In the instance of the second case, a patient with total blindness presented for diagnosis, the members hazarded no statement as to cause.

(a) The first patient is one from whom a fibroma was removed by Doctor A. W. Lueke, on November 31, 1912. I presented him before this section on October 25th, 1912. At that time the patient had had a decompression operation in the right temporal area, some six weeks previous. The report of that presentation will be found in the CLEVELAND MEDICAL JOURNAL, Vol. XI, Nov., 1912, page 848. The report of the operation will be found in Vol. XII, May, 1913, page 325, under "Tumors of the Cerebello-Pontine Angle."

Briefly, at the time of the former presentation the patient had marked choked discs on both sides, and the vision of either eye was 20/40. And the patient was totally deaf in the right ear and showed a marked fairly hard cerebral hernia over the sight of the decompression. He had muscular incoordination and suffered with severe persistent headaches radiating from the base of the brain forward up over the right eye. At present the patient externally shows no evidence of the operation sites by any bulging. He is enjoying good health, and back at his old occupation. The vision of either eye corrected 20/20. The color fields in both are somewhat contracted. The ear findings remain unchanged. The patient is presented for the purpose of emphasizing what good results

may follow from a condition with such unfavorable prognosis, as an encouragement to induce operators not to refuse aid, as was done in this case at first.

(b) The second patient to be presented is totally blind. Both pupils are widely dilated, the arteries are small, the veins markedly tortuous, in the region of the disc, and the fundi show other degenerative changes. The thing of interest in this case, besides the appearance of the fundus, is the absence in the history, so far as I can determine, of any adequate explanation of the cause. The history is as follows:

The patient at present aged 26. Had always enjoyed good health and had suffered no children's diseases except chicken-pox. States she was subject to nose-bleed in childhood. She is a Fin by nationality and has been in this country eight years, working at housework. Up to the present trouble she had been able to do fine sewing. About six years ago the patient states that she "caught cold by getting her feet wet." The history of this cold as to cough, et cetera, is unsatisfactory. The patient only states that she suffered severe headaches for three weeks, although she kept on at her work. She also at this time suffered with chills, and when she would get up quickly things all "turned black." When she recovered from this illness she noticed no trouble with her vision, but about a year later she observed that her vision was failing. She was then otherwise in good health. She treated with a physician for some months, with no improvement. About four years ago last October vision was quite poor and growing worse, and she was again suffering with headaches and dizziness, although still able to see sufficiently to keep on with her housework. At this time she went into Lakeside Hospital, where a decompression operation in the right temporal area was performed. In spite of this the vision steadily failed, and she is at present totally blind. Doctor Alvin S. Storey has made X-ray plates of the skull, but they are negative. The hearing of both ears is acute and their appearance normal. Physically the patient appears in good condition.

Patient presented for any suggestions which might be offered.

(c) The third patient presents a papillomatous overgrowth beginning in the sclero-corneal junction externally. This patient was shown before the medical society about three or four months ago. A report of the tissue by Doctor Ladd was negative as to malignancy. Before this time cautery had been tried without any result as to checking the growth. Since then X-ray treatment has been tried by Doctor LeFevre, with no appreciable results upon the growth. The ingrowing eyelashes have disappeared. I now expect to have Doctor LeFevre try fulguration.

Members present were Doctors Cogan, Lauder, Metz, W. H. Tuckerman, W. C. Tuckerman, J. E. Tuckerman, Chamberlain, Hartzell, Kochmit, Colvin, Prendergast, Monson, Rowland, L. K. Baker and Doctor Gill, of Elyria.

---

**Industrial Accidents.**—The enactments of laws in various states on Workmen's compensation for injuries has aroused increased interest in the statistics and physical and psychic conditions of industrial accidents. The total number of these accidents is almost appalling. The lowest estimate places the fatal accidents to adult workers in the United States at 35,000 a year, with an additional 1,250,000 non-fatal accidents. The Massachusetts Industrial Accident Board, on the other hand, placed the number of workers killed by accident yearly at 75,000, which apparently includes not only adults, but also workers of all ages, while the number of injured of the same classes was placed by this Massachusetts authority at 3,000,000 or over. An earthquake in a foreign country that kills half this number of persons and maims one-fiftieth of those injured in our United States industries is spoken of as catastrophic.—*J. A. M. A.*



## REPORT TO THE ACADEMY OF MEDICINE OPPOSING STATE RECOGNITION OF OPTOMETRY

By H. G. SHERMAN, M. D., Cleveland

*Mr. President and Members of the Academy:*

Your President and Program Committee have very graciously permitted me to present for your consideration a question which would require many times the fifteen minutes allotted, were it considered from a scientific standpoint. I shall only attempt to present in a very cursory manner a few simple fundamentals, with a view of asking your approval or disapproval of the measure, which Doctor Clemmer assured us would be presented to the Legislature now in session, giving State recognition to the so-called practice of Optometry. An Optometrist is one who measures the power of vision specifically, an optician without medical training who fits eye-glasses. (The Century Dictionary.)

The course of Optometry, which embraces the following demands as outlined by the requirements of the Ohio State University, which has recently established a course to be known as the "Department of Optometry of the Ohio State University," proposes to grant a diploma in Optometry upon completing the following requirements in a period of two years, made up of four semesters. The first year's course, first semester, requires essentials of algebra, geometry and trigonometry adapted to needs of Optometrists, principles of physics, anatomy of the eye, English. Second semester, Theoretical Optics, Practical Optics, embraced under the head of "Optometry 2, 4 and 6," and Anatomy of the Eye. The second year, first semester, involves Theoretical Optics, Physiological Optics, Practical Optics, Theoretical Optometry, Lectures by a medical man who is a specialist in Pathology. The second semester of the second year discusses Theoretical Optics, Physiological Optics, Radiant Energy, all embraced under six heads of Optometry. This comprehensive course also requires two years of High School work. This elaborate course to be given under the direction of six Opticians who reside in various parts of the State of Ohio, in conjunction with the Professor of Anatomy and a Professor of English.

Now, let us consider for a moment what is meant by anomalies of refraction and accommodation (conditions to be dealt with by the Optometrist). It is the exactest portion of Ophthalmology, and in fact of all medicine, for it is based directly upon the application of physical and mathematical laws to the eyes. By the refraction of the eye we mean its optical adjustment when in the state of rest; that is, in the absence of any accommodative effort. The optical adjustment of the normal eye is correct; that is, parallel rays impinging upon the cornea are united so as to form a sharp image upon the retina. The retina, therefore, is situated at the principal focal distance of the dioptic apparatus of the eye and thus constitutes its focal plane. Such a refractive condition is called Emmetropia (normal eye). The mechanism of accommodation depends upon the elasticity of the lens, owing to which the latter always tends to approximate to the shape of a sphere. The lens is enclosed in a capsule, which is attached to ciliary body by the fibres of the zomula of Zinn. These fibres are tightly stretched, and hence exert a uniform traction from all sides upon the capsule, so that the latter and the lens, as well, are flattened. The elasticity of the latter can make itself apparent only when the tension of the fibres of the zomula, hence, too, of the capsule of the lens are relaxed.

The act of accommodation is also regularly accompanied by a contraction of the pupil and a movement of convergence of the eyes. The accommodation diminishes with age, and this diminution is manifested by ton of the pupil and a movement of convergence of the eyes. The accommodation from the normal may relate either to its refraction or its accommodation. The anomalies of the refraction are to be rigidly differentiated

from those of accommodation, with which they are frequently confounded. An eye whose refraction varies from the normal or emetropic we call ametropic. There are three varieties of ametropia, myopia (essentially a diseased eye), hypermetropia (a deformed eye), and astigmatism. When the refraction of the eyes are different it constitutes anisometropia. The correction of errors of refraction by lenses is a surgical procedure, whereby an artificial application resolves a defective organ into a physiological one.

Time will not permit me to do more than simply call your attention to the vital importance in its relations, or in their relations, to the question of accommodation, that disturbances of the motility of the eye and conditions effecting the general health exert; also the effect of position, relation to the object, light, ventilation, print, et cetera.

In all cases of examination for refraction it is absolutely essential that a careful objective examination be made, including muscle balance and the fundus oculi, which latter requires skill in the use of the Ophthalmoscope; the intelligent employment of the Ophthalmoscope not only discloses the nature but approximately the degree of the refractive error. What is of vastly greater importance, is the fact that it frequently discloses functional and pathological conditions within and remote from the eye. For example, a patient may not be suffering pain or other serious inconvenience, able to read fine print, and yet be suffering from double optic neuritis, inflammatory or degenerative changes in remote organs, unsuspected by general clinical symptoms, may first be detected in functional disturbances or pathological conditions of the eye ground.

The importance of muscle imbalance of the extrinsic muscles of the eye, in relation to refractive error and reflex disturbances effecting the whole economy, is thoroughly understood and appreciated by all well-informed physicians.

In the fundus oculi we see the termination of an artery and the commencement of a vein, with the blood circulating in each, the termination of a nerve which, from its close proximity to the brain, undergoes significant changes in various diseases of the brain and spinal cord; also organs in intimate relation thereto. A marvelous nervous structure, in the retina, and a complex vascular structure in the choroid, which are peculiarly sensitive to general disease, with characteristic local lesions.

The foregoing examination and understanding presumes a knowledge which only the carefully trained medical man possesses, and which is not comprehended in the slightest degree by the so-called Optometrist, who deals with the mechanics of the eye only. I do not insist that all anomalies of refraction require a paralyzing mydriatic for the determination and estimation of the errors. I do contend, however, that only the trained physician, familiar with all the contributory factors having relation to the eye structure, and its functions, is competent to judge. It would be cruel to estimate the loss of eyesight and extreme suffering due to the assumption that all that is required in manifest impairment of vision, due to refractive error, is a routine method of adjusting lenses that may restore vision, and apparently fulfill the conditions required, and which may be acquired by a novice in a comparatively short time. The price of this lack of equipment in destruction of vision from glaucoma alone is appalling, not to enumerate the irreparable complications which arise from delay in consulting a skilled oculist.

Finally, throwing aside all else, and assuming the Optometrist to be a competent refractionist, he must realize his dishonesty, knowing that he is not permitted to do that which is necessary for a proper estimation of the refractive errors, unless he is a legalized practitioner of medicine. If he is unskilled he is a menace and should be suppressed. This I do not hope for, but I plead on behalf of an honorable and intelligent profession that he be not legally recognized, unless fulfilling the conditions required in the "Medical Practice Act," for humanitarian reasons. (See footnote.)\*

\*I have quoted freely from Fuchs' Text Book of Ophthalmology.



## BOOK REVIEWS

**A Practical Textbook on Infection, Immunity and Specific Therapy, with Special Reference to Immunological Technique.** By John A. Kolmer, M. D., Dr. P. H., Instructor of Experimental Pathology, University of Pennsylvania; Professor of Pathology and Bacteriology, Philadelphia Polyclinic, et cetera. Introduction by Allen J. Smith, M. D., Sc. D., LL. D., Professor of Pathology, University of Pennsylvania. An octavo volume of 899 pages, with 143 original illustrations, 43 in colors, by Erwin F. Faber, Instructor of Medical Drawing, University of Pennsylvania. W. B. Saunders Co., Philadelphia and London, 1915.

The introduction by Professor Smith, in an all too great degree of brevity, outlines the relation of infection, immunity and specific therapy to medicine in general, and draws attention to the danger of accepting as final the hypotheses advanced to explain the various phenomena observed in disease and the mechanism of resistance. He presents the promise that future researches in physical chemistry may overthrow much of our present conception of immune manifestations and urges on the reader the acceptance of present day theories and speculations only tentatively. Recognizing the fact that immunology is not a science separate and apart from pathology, Professor Smith realizes that the teaching of the subject must be provided for in the medical school curriculum. This problem presents itself in practically every medical school in this country, and the solution must be immediate. Whether the fifth year offers the solution, as suggested by Professor Smith, whether the further development of entrance requirements solves the question, or whether the subject should be taught as part of pathology and bacteriology, without further crowding the general roster, remains a question for discussion.

The purpose of the book, as outlined by Doctor Kolmer, is (1) to give practitioners and students of medicine a connected and concise account of our present knowledge of the processes indicated in the title; (2) to give a guide book to those engaged in this type of work; (3) to outline a course in this division of pathology for students.

In so far as the first avowed object is concerned, the book can be highly recommended. The presentation is not discursive, nor does it develop the controversial side to any great degree, but these features would be of distinct advantage to those who wish to learn the generally accepted point of view. The presentation occupies a large part of the book and considers the principles of infection and of immunity in the latter group, covering the types and theories of immunity, phagocytosis and opsonins, vaccines, anti-toxins, ferments and anti-ferments, agglutinins, precipitins, various cytolytic agents, cytotoxins, amboceptors and complement fixation, the relation of physical chemistry to immunity. An excellent feature is the discussion of applied immunity in the prophylaxis, diagnosis and treatment of disease.

The technical procedures are well presented and excellently illustrated. Heart puncture for procuring animal bloods is not given its proper place as a simple and effective method. The illustrations are sometimes unnecessary, as for example in depicting the lancet puncture of a finger. On the whole, however, the chapters on general and special immunological methods are well written, direct and clear. It is to be regretted that the author does not emphasize the necessity of proper training in methods, inasmuch as practical work is the only practicable approach to entry into this difficult field of biological science.

The outline of laboratory exercises can merit only great praise and can well serve as a basis of instruction in any medical school in which experimental immunology is to be introduced.

Mr. Faber's illustrations are as usual excellent in every respect, and serve splendidly to render more clear the text.

The literature has been carefully reviewed and the book is strictly up-to-date in every particular. The reviewer takes pleasure in recom-

mending its careful reading by those who wish a clear presentation of the subject, be they physicians, students of medicine or workers in allied sciences. Practical in high degree, it yet gives sufficiently broad discussions to make it readable, extremely instructive and a splendid guide in its field.

H. T. K.

---

## VITAL STATISTICS

---

### Questions in Vital Statistics Asked in Examinations for Entrance to the United States Public Health Service

---

1. What are vital statistics?
2. What is meant by demography?

#### Population Statistics

3. How is the population of a city of State ascertained?
4. For the purposes of vital statistics, how is the population of a city or State ascertained for years between censuses?
5. Discuss methods of estimating population for intercensal and post-censal periods.
6. Discuss the relationship between population statistics and birth, marriage, morbidity, and mortality statistics.
7. A city had 100,000 inhabitants at the time of the taking of the Twelfth Census (June 1, 1900), and 123,700 at the time of the taking of the Thirteenth Census (April 15, 1910). Give the estimated population of that city as of July 1, 1915, on the basis of arithmetical increase.
8. In a city having a population of 57,600 April 15, 1900, and of 66,300 April 15, 1910, what will be the estimated population as of July 1, 1914, the estimate to be made on the basis of arithmetical increase?
9. In a city of which the enumerated population April 15, 1910, was 66,300, and in which the average annual rate of increase during the previous intercensal period figured on a geometrical basis of increase had been 3 per cent, what will be the estimated population as of April 15, 1915, figured on the geometrical basis of increase?

#### Marriage Registration and Statistics

10. What purposes are served by the registration of marriages?
11. Describe a common method in use in the United States by which the registration of marriages is accomplished.
12. What are marriage rates?
13. How are marriage rates expressed; that is, in what terms are they usually stated?
14. What factors influence marriage rates?
15. In a city having a population of 53,420 inhabitants at the taking of the Twelfth Census (June 1, 1900), and of 72,643 at the taking of the Thirteenth Census (April 15, 1910), there were during the calendar year 1913, 576 marriages recorded. What is the marriage rate for the year?

#### Birth Records and Statistics

16. What purposes are served by the registration of births?
17. What is a birth certificate, by whom should it be made out, and with whom registered.
18. Describe a method in common use in the United States for the registration of births and the compilation of birth statistics for a State?
19. What are the essential data usually required in birth certificates?
20. What are birth rates.
21. How are birth rates expressed; that is, in what terms are they usually stated?
22. What factors influence birth rates?



23. What uses are made of birth records in public health administration?

24. Upon what does the accuracy of birth records and birth statistics depend?

25. The city of E had 125,632 inhabitants on January 1, 1913, and 130,368 inhabitants on December 31, 1913. During the month of June, 1913, there were 247 births and during the month of July, 1913, there were 223 births recorded. Give the birth rate for the city during the period June 1 to July 31, both days inclusive; also give the birth rates for June and July separately.

26. In a city which had a population of 44,360 April 15, 1900, and of 53,230 as enumerated April 15, 1910, and which, during the calendar year 1913, had 1,376 registered births, what was the crude or general birth rate for the calendar year 1913? In estimating population use the arithmetical method.

### Morbidity Reports and Statistics

27. What are morbidity reports?

28. How are morbidity reports obtained?

29. What are morbidity statistics?

30. How are morbidity statistics obtained?

31. Describe a method in common use in the United States for securing morbidity reports.

32. What purposes are served by morbidity reports? Of what use are they to a local health department? Of what use to a State health department. Of what use to the Federal health service?

33. Why is the reporting of cases of communicable diseases to the health department by practising physicians necessary for the control of these diseases?

34. What factors influence the completeness with which morbidity reports are obtained in a community?

35. Upon what does the accuracy of morbidity reports depend?

36. What are morbidity rates?

37. What are crude morbidity rates?

38. What are specific morbidity rates?

39. How are morbidity rates expressed, that is, in what terms are they usually stated?

40. What are fatalities, or case mortality rates, and how expressed, that is, in what terms are they usually stated?

41. The city of F had an estimated population of 324,000 on July 1, 1912. During the year 953 cases of typhoid fever were reported in the city and there were 51 death certificates registered in which typhoid fever was given as the cause of death. Give the typhoid morbidity rate, case mortality rate, and death rate.

42. The population of the city of G was 11,400 at the time of the taking of the Twelfth Census, June 1, 1900. On April 15, 1910, the population was 14,560. During the year 1912, 75 cases of diphtheria occurred in the city. Of the 75 cases 6 terminated fatally. In making a report of the epidemic what would you report the morbidity rate of diphtheria to have been, what the diphtheria fatality (case mortality) rate to have been, and what the mortality rate?

43. What purposes are served by the registration of deaths?

44. What is a death certificate, by whom is it made out, and with whom registered?

45. Describe a method in common use in the United States for the registration of deaths?

46. What are the principal data called for by the United States standard death certificate?

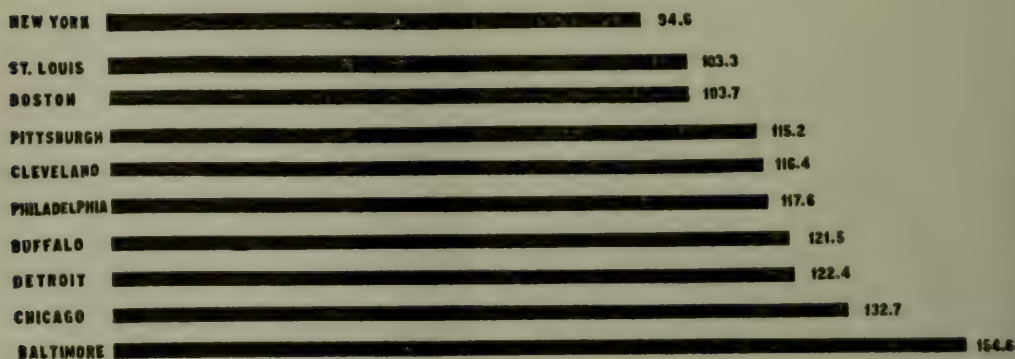
47. What is the registration area for deaths of the United States Census Bureau?

48. What are mortality statistics?
49. What are death rates?
50. How are death rates expressed, that is, in what terms are they usually stated?
51. What are crude death rates, specific death rates, standardized (sometimes called corrected) death rates?
52. What factors influence crude death rates?
53. What effect have variations in age distribution of population on crude death rates?
54. Upon what does the accuracy of death registration and mortality statistics depend?
55. What uses are made of the records of deaths and of mortality statistics in public health administration?
56. How is the data obtained from which the United States Census Bureau compiles the mortality statistics of the registration area for deaths?
57. To what extent do mortality statistics show the actual causes of death and upon what does their accuracy in this depend?
58. On July 1, 1914, the city of D had 51,200 population. During the calendar year 1914 there were 896 death certificates registered. How would the crude death rate for the year 1914 ordinarily be expressed?
59. In a city having a population of 44,300 on April 15, 1900, and of 53,230, as enumerated April 15, 1910, and which during the calendar year 1913 had 932 registered deaths, give the crude, general, or central death rate for the calendar year 1913.
60. In a city which had a population of 44,360 on April 15, 1900, and 53,230, as enumerated April 15, 1910, and which during the first six months of the calendar year 1913 had 530 registered deaths, express the death rate for this period in terms of an annual rate per 1,000 population.
61. In a city which had a population of 44,360 on April 15, 1900, and 53,230, as enumerated April 15, 1910, there were during the month of April, 1913, 103 registered deaths. Give the April death rate expressed in terms of an annual rate per 1,000 population.

### Infant Mortality and Life Tables

62. What is meant by infant mortality?
63. What are infant mortality rates and how expressed?
64. What are life tables?

### Death Rate of Infants Under One Year of Age in the Ten Largest Cities in the United States—Year 1914—Rate per 1,000 Births Reported



The statistics from which this chart was prepared were taken from reports furnished by the Commissioners or Registrars of the Health Departments of the cities indicated, and include all data received up to February 1, 1915.



# The Cleveland Medical Journal

---

Vol. XIV.

MARCH, 1915

No. 3

---

## BRAIN IN PRIMITIVE MAN \*

By DAVIDSON BLACK, B. A., M. B. (Tor.), Anatomical Department,  
Western Reserve University, Cleveland, Ohio.

All evidence of man's antiquity and of his primitive structure and civilization depends upon the natural preservation in geological strata of known age, of certain hard parts such as the skeleton and teeth, and of certain stone implements of human manufacture.

Only under exceptional conditions and in comparatively recent times do we find such soft parts as the brain preserved for our inspection by natural agents. Such specimens have been found in Egypt (1), Tasmania (2), Ohio (3) and elsewhere, but these brains differ in no fundamental way from those of primitive races living today. We are thus dependent upon such information as may be gleaned from the study of the walls of the cranial cavity for our knowledge of the brain in primitive man.

On account of the close growth relationship between the bony cranium and its contained structures, inequalities upon the surface of the brain, whether due to the presence of blood vessels or of convolutions, are more or less accurately reproduced upon the inner surface of the skull, and much of the form of the brain is revealed from a cast of the skull cavity. In the recent state, however, the whole skull cavity is not filled by the brain, for a certain volume is occupied by the brain membranes and associated fluid spaces, so that an endocranial cast represents the brain plus its membranes, and the terms cranial capacity and brain volume are not synonymous.

In the lower gyrencephalous mammals, especially in the Carnivora and Ungulata, the convolutional pattern of the cerebrum is much more clearly indicated upon the endocranial cast than is the case in the Anthropeidea. This can readily be seen

---

\*Being the second of a series of four papers presented by the Anatomical Department at the Experimental Medicine Section of the Academy of Medicine of Cleveland, Dec. 11th, 1914.

in figure 1, where a cast of the skull cavity of a giraffe is compared with that of a gorilla. Various factors contribute to this condition in the lower forms, but the most important of these undoubtedly are: (a) the comparative thinness of the dura mater, (b) the habitual position of the head in relation to the action of gravity, and (c) the early maturation of growth processes in the head region.

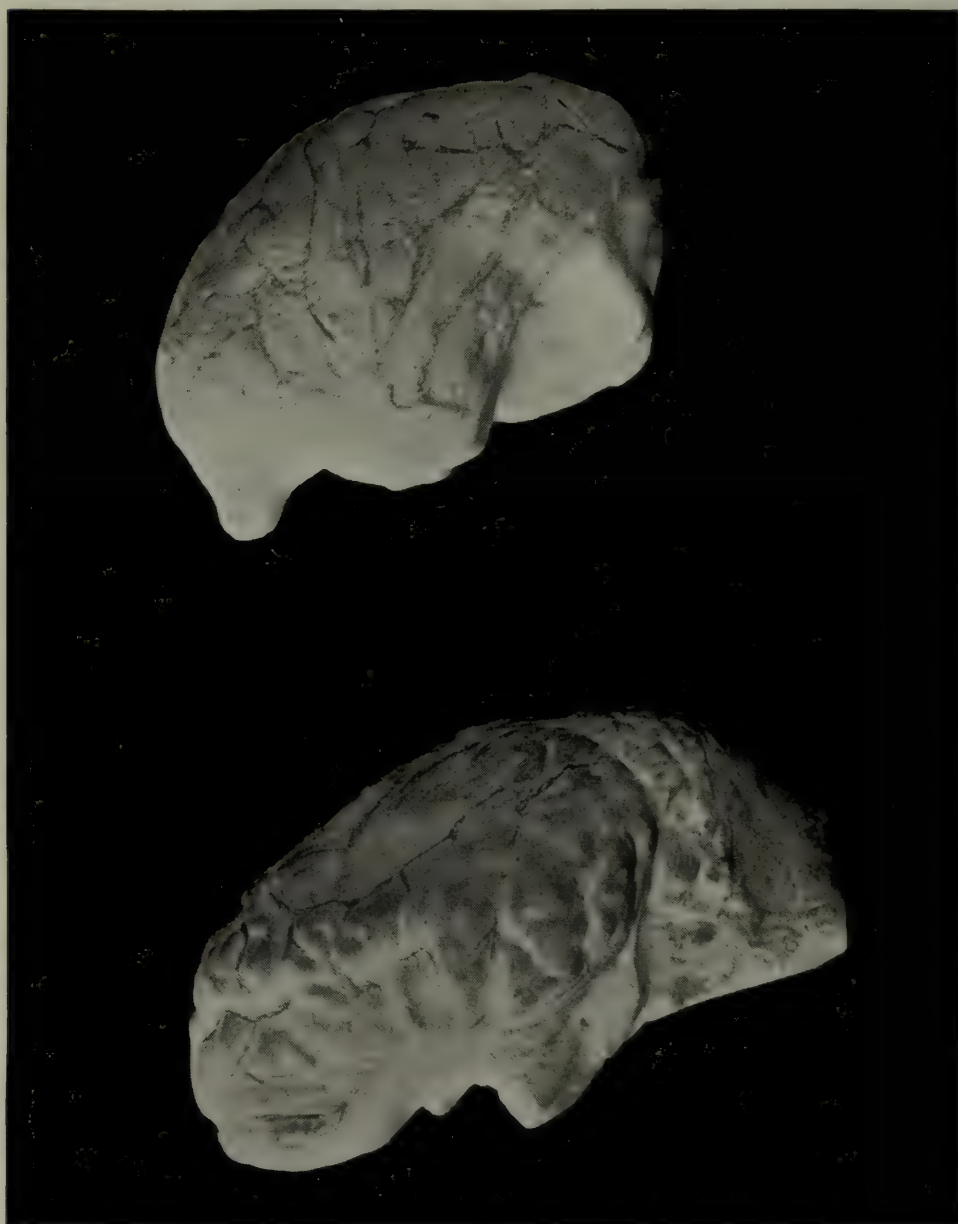


FIG. 1

Photograph of endocranial casts of giraffe and gorilla. In giraffe (lower) the convoluted pattern is much more clearly marked than in gorilla.

It is to the development and differentiation of a special portion of the forebrain that the mammalia as a class owe their progressive rise in importance from early Eocene times. Elliot



Smith (4) has termed this special area the Neopallium, and he has shown it to be peculiar to and characteristic of, the mammalia. In man the specialization and development of the neopallium reaches its climax, and indeed the present dominant position of man among the mammalia is due solely to this increase in neopallium.

In the brain, as in other organs, shape and external configuration are dependent upon function and internal structure. Elliot Smith (5) and Ariens Kappers (6) have demonstrated beyond a doubt the fundamental relationship obtaining between the fissural pattern of the neopallium and its histological structure.

As a single example of how intimately form, function and internal structure are related in the human brain, one may refer to the work of Symington and Crymble on the central fissure (7). These observers have shown that the so-called "genua" of the Rolandic sulcus are due in reality to the expansion in the form of buttresses, of the precentral or motor cortex of the limb areas. Thus, the form of the central sulcus is an outward expression of the histological structure and physiological activity of the precentral cortex.

Campbell (8), Brodmann (9), Bolton (10) and numerous other observers have shown that histological structure and physiological activity in the cortex are directly and intimately related—an alteration in structure postulates a change in function.

It becomes thus possible even in the present limited state of our knowledge to form a fairly accurate estimate of the zoological rank of a gyrencephalous mammal from the study of the sulci and gyri of the cerebrum alone.

Histological examination of the neopallium of the gorilla shows that the great projection centers—motor, general sensibility, auditory and visual—are well developed and but little smaller than the same projection areas in man. The great difference between the area of the neopallium in the two forms is due to the development between the projection areas of the so-called "association areas" of homio.

This expansion, although it occurs in all regions, is most marked in the human brain in the frontal and temporo-parietal areas, and in this connection Elliot Smith says that the "distinction between the behavior of man and other mammals is obviously correlated with the great expansion of the temporo-parietal

area" (11). Regarding the functions of these distinctively human cortical areas, the same author may be quoted as follows: "The temporo-parietal area is the storehouse for the memories of the states of consciousness compounded of visual, auditory and tactile sensations, and its progressive growth and specialization is the measure of the efficiency with which it performs these functions. . . . . The prefrontal area is concerned with attention and the orderly control of the psychical activities of the whole cortex."

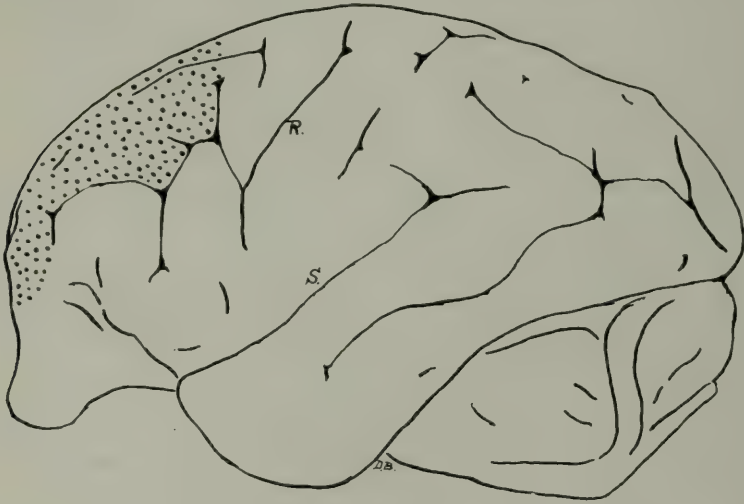


FIG. 2

Lateral view of endocranial cast of gorilla. The dotted area indicates the approximate extent of the frontal and prefrontal area, that is, the region in front of the precentral and inferior frontal sulci. R—central fissure. S—Sylvian fissure.

Between certain limits the total weight of the brain has no known direct bearing upon the mentality of its possessor. In sane individuals in modern man the brain weight may vary from the very low limit of 850 grams up to and even beyond 2,000 grams. Comparisons may be instituted between archaic and modern brains by the use of Manouvrier's formula for calculating the approximate brain weight from skull capacity:  $W \text{ (weight)} = C \text{ (capacity)} \times 0.87$ .

Reference to the accompanying table will show that the brain volume of the most primitive member of the genus homo greatly exceeds that of the largest anthropoid. Pithecanthropus, the Java ape-man, occupies apparently an intermediate position between the large anthropoids and homo. Unfortunately no endocranial cast of Pithecanthropus has as yet been available for general study; so further comparison between this form and primitive man lies outside the range of the present inquiry.



TABLE I

Showing the brain weight and brain volume together with the approximate ratio between brain and body weight.

	Brain Volume	Brain Weight	Ratio between Brain Wt. and Body Wt.
1. Gorilla .....	600 c. c. (max.)	525 gms.	1/175
2. Pithecanthropus .....	855 c. c.	750 gms.	1/94
3. Gibraltar Man .....	1050 c. c. + ?	950 gms.	.....
4. Neanderthal .....	1230 c. c.	1070 gms.	1/70 $\pm$ ?
5. H. mousteriensis ....	1500 c. c. +	1300 gms.	1/70 $\pm$ ?
6. Eoanthropus .....	1200 c. c. $\pm$ ?	1040 gms.	.....
7. H. sapiens .....	1050-2000 c. c.	900-1800 gms.	1/51
8. Average Eng. male..	1600 c. c.	1360 gms.	1/51



FIG. 3

Cast of the inner surface of fragments of the skull of Eoanthropus (Pitldown). The position of the temporal fragment in relation to the larger fragment above is approximately correct. No attempt has been made to show the occipital fragment and the blackened area has been added only as an aid in orientation. The dotted area in front of the inferior frontal and precentral sulci represents the probable extent of frontal region.



FIG. 4

Left lateral view of endocranial cast of *Homo neanderthalensis hauseri*. Dotted area in front of inferior frontal and precentral sulci to indicate approximate extent of frontal region.

It will thus be seen that in so far as absolute cranial capacity is concerned, primitive man as we know him cannot be considered inferior to his modern successor. The bulk of the brain in the three Neanderthal examples selected in Table I (Gibraltar, Neanderthal and Le Moustier) and also in *Eoanthropus* (Piltdown man) comes well within the range of normal variation obtaining in this organ in *Homo sapiens*.

The essential difference between the brain of archaic and modern man lies rather in the *relative* development of the various cortical areas. To illustrate the general principles of this point figures 2 to 7 have been drawn. These figures represent the outlines of the left side of a series of representative endocranial casts at the same magnification. In each case the area lying in front of the precentral and inferior frontal sulci is shaded to indicate the approximate extent of the combined frontal and prefrontal areas.

It will be noted that the *absolute* size of this frontal area is greater in the two types of *Homo sapiens* (Figs. 6 and 7) than is the case in *Eoanthropus* and the two Neanderthal casts (Figs. 3, 4 and 5 respectively). Not only is this true but, from study of the casts themselves, it would appear that modern man possesses a frontal area of larger size *relative* to the temporo-parietal area than is the case in the Neanderthal type. *Eoanthropus* apparently differs from Neanderthal man in this respect, for, in this form, the ratio between frontal and temporo-parietal areas more nearly approaches that obtaining in modern types.



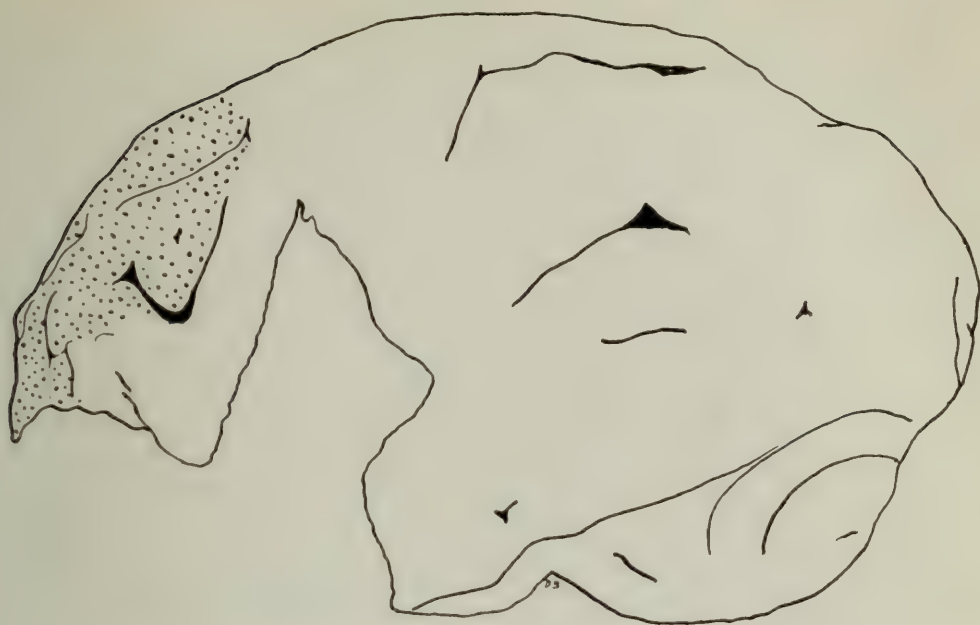


FIG. 5

Lateral view of the endocranial cast of the La Quina man (a Neanderthal type). Dotted area to indicate approximate extent of frontal region. For further description of this cast and also other Neanderthal casts vide Anthony (12) and Boule and Anthony (13).

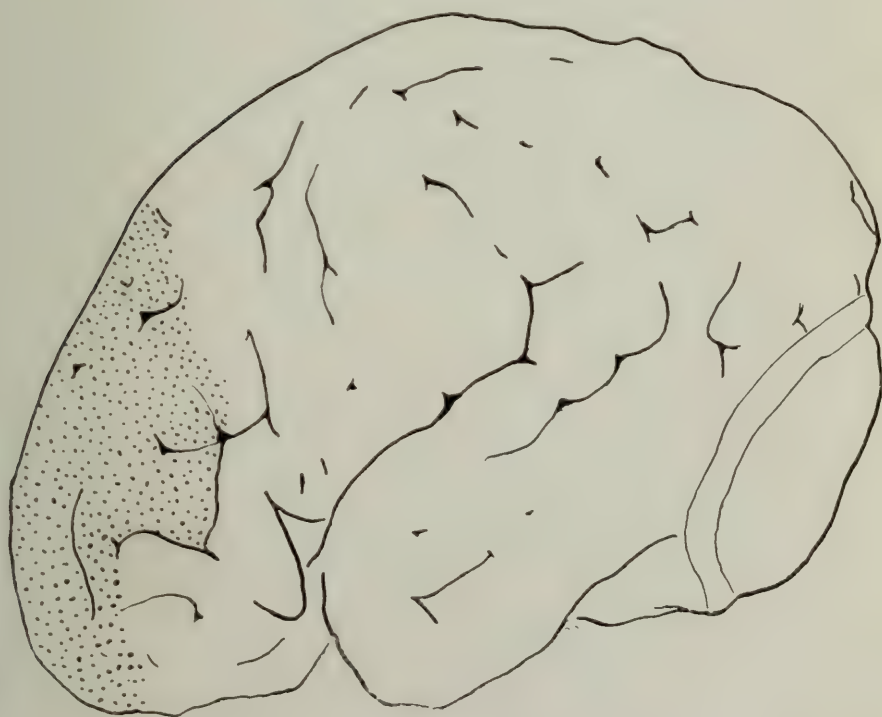


FIG. 6

Lateral view of an endocranial cast of an Aboriginal Australian. This is to illustrate the approximate distribution of the frontal area (dotted) in a primitive type of *Homo Sapiens*.

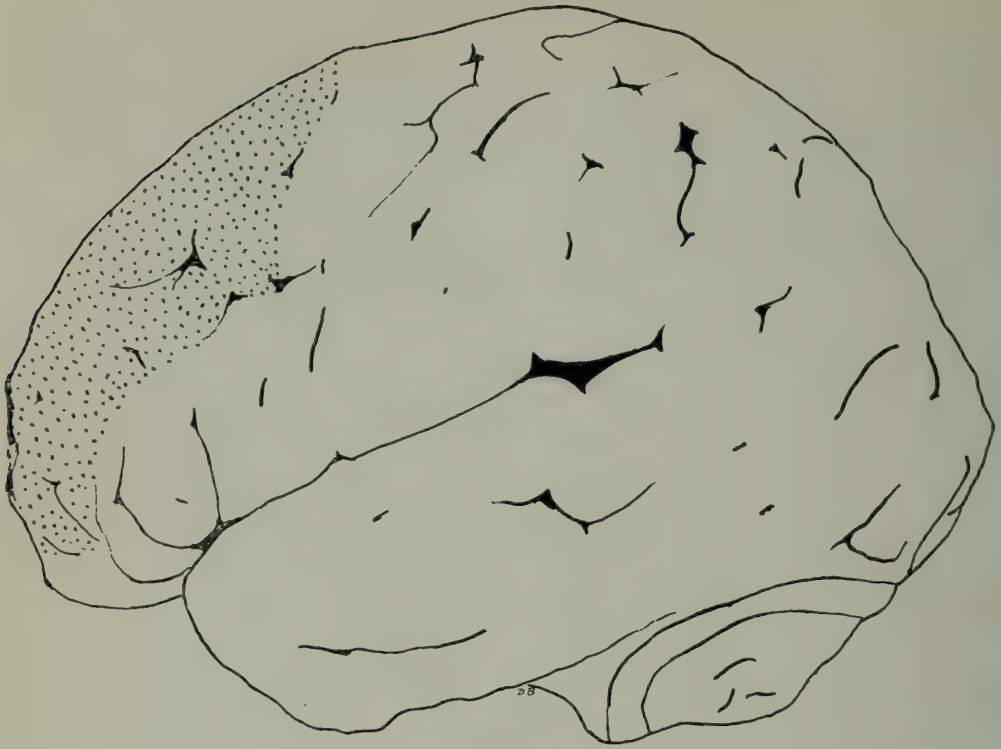


FIG. 7

Lateral view of the endocranial cast of Dean Swift's skull. An example of a highly developed type of *Homo Sapiens*. Approximate distribution of frontal area indicated by dots.

In other words, Neanderthal man has a temporo-parietal region which in some cases is almost as highly developed as in some modern types. On the other hand, in the degree of expansion of the frontal area, Neanderthal man falls far behind his modern successor.

The significance of these points becomes apparent when we recall what has been said of the functions of these various areas. The great expansion of the temporo-parietal area is an indication of the human status of its possessor. The frontal area is concerned in the orderly control of the activities of the whole cortex and, for the perfection of this control, must develop *pari passu* along with the temporo-parietal region.

Recent deductions made from the study of the remains of primitive man point to the conclusion that the Neanderthal race became extinct, i. e., does not represent a stage in the evolution of modern man. Such a theory would receive support from the above observations upon the degree of development of the frontal region. Furthermore, it would appear probable that the comparatively slight expansion of the frontal area in Neanderthal man, in proportion to the bulk of the remaining cortex, played no inconsiderable part in his failure in the struggle for existence.



With regard to the position of the Eoanthropus in the line of human descent, it has already been noted that despite the small size of the frontal region, the disparity between this region and the temporo-parietal area is apparently not so marked as is the case in Neanderthal man. Indeed, from the evidence at our disposal, it seems probable that Piltdown man, if not our direct ancestor, is at least a close relative of this elusive being.

---

#### Literature Cited

1. G. Elliot Smith: On the natural preservation of the brain in the Ancient Egyptians. *Jour. Anat. and Physiol.*, Vol. 36, 1902.
  2. G. Elliot Smith: Le cerveau d'un Tasmanien. *Bull et Mém. de la Soc. d'Anthrop. de Paris*, Dec., 1911
  3. D. S. Lamb: Mummification, especially of the Brain. *Am. Anthropologist*, N. S., Vol. 3, 1900.
  4. G. Elliot Smith: Notes on the natural subdivision of the cerebral hemispheres. *Jour. Anat. and Physiol.*, Vol. 35, July, 1901.
  5. G. Elliot Smith: On the morphology of the brain in the mammalia, etc., *Trans. Linn Soc. Lond.*, 2nd Series Zool., Vol. VIII, Feb., 1903. See also: Descriptive catalogue of the Roy. Col. of Surg., Vol. II, 2nd ed., 1902.
  6. C. U. Ariëns Kappers: Cerebral localization and the significance of Sulci, 17th Internat. Congress of Med., London, 1913.
  7. J. Symington and P. T. Crymble: The central fissure of the cerebrum, *Jour. Anat. and Physiol.*, Vol. 47, 1913.
  8. A. W. Campbell: Histological studies on the localization of cerebral function. Cambridge, 1905.
  9. K. Brodmann: Vergleichende Lokalisationslehre, etc. Leipzig, 1909.
  10. J. S. Bolton: The Functions of the Frontal Lobes, Brain, 1903.
  11. G. Elliot Smith: Presidential Address to the Anthropol. Section of the Brit. Ass. for the Adv. of Sci., Section H, Dec., 1912.
  12. R. Anthony: Les principales caractéristiques de l'encephale de l'Homme neanderthalien de La Quina. *Rev. Anthropol.*, N. 2, Feb., 1913.
  13. M. Boule and R. Anthony: *L'Anthropologie*, March, 1913.
- 

**Canadian Hospitals.**—The *British Medical Journal* states that the hospitals of Canada have been severely affected by the war, and in Montreal it seemed as though the three principal hospitals might have to close their doors. A campaign among the 800 Governors of the General Hospital produced \$150,000 in two days, sufficient to meet expenses for the next two or three years. The appeal for funds for the Notre Dame and Western Hospitals has been equally successful, and they will remain open at least for some time to come. In Vancouver the staff of the General Hospital have voluntarily agreed to a reduction of 5 to 10 per cent in their salaries in order to help the board in its financial difficulties.

# THE FREQUENCY OF DUCT-LIKE SPACES IN THE THYMUS GLAND, WITH REMARKS ON THE FORMATION AND FATE OF HASSALL'S CORPUSCLES

By DAVID MARINE, M.D., from the H. K. Cushing Laboratory of Experimental Medicine, Western Reserve University, Cleveland, Ohio

Of the many unsettled problems in the anatomy of the thymus gland that of the formation and fate of Hassall's corpuscles would appear easiest of solution. Nevertheless there are three theories concerning their origin that have obtained the support of different groups of observers.

First. The theory of Afanassiew<sup>1</sup> maintained that Hassall's corpuscles arose from the blood vessels by a proliferation of their endothelium and therefore were essentially involutionary products of mesodermal origin—the results of an obliterating angitis. This view was shared by Cornil and Ranvier<sup>2</sup>.

Second. The theory of Hammar<sup>3</sup> maintains that Hassall's corpuscles are of endodermal origin, and are formed by the proliferation of one or more reticulum cells during the physiologically active periods of the thymus and therefore are not involutionary products.

Third. This view also admits their endodermal origin, but that in their fully developed state they represent the involutionary hyalinized state of the original thymic tubules (ducts of Remak) and cords.

The data which I wish to report favor the third view, and are drawn from the less studied fields of pathology and congenital developmental defects instead of the more studied fields of embryology. They are tabulated as follows:

Animal	Total No. Specimens	Specimens with Hassall's Corpuscles	Specimens with Duct Remnants	Specimens with Ducts and Hassall's Corpuscles	Specimens with large Cystic Spaces	Specimen with no Hassall's Corpuscles
Old sheep	9	9	3	3	1	0
Young sheep (lambs)	10	10	4	4	2	0
DOGS						
Series T	98	95	22	19	9	3
DOGS						
Series A	177	172	36	31	8	5
Chicks	79	79	5	5	0	0
Man	126	126	1	1	0	0



*Old Sheep Thymus Glands*—9 specimens—All contain well formed Hassall's corpuscles. Three have, in addition, duct remnants or partially formed Hassall's corpuscles, and in one of the three there are numerous persistent ducts and a correspondingly small number of well formed Hassall's corpuscles.

*Lambs' Thymus Glands* (6-7 mos.)—10 specimens—All contain well formed Hassall's corpuscles; four have, in addition, duct remnants and forming Hassall's corpuscles; and two of the four have extensive, large, irregular cystic spaces containing an albuminous debris in which are shed epithelial cells and leucocytes (mononuclears and eosinophiles).

*Dog Thymus Glands* (1) Series T,—98 specimens, 60 males and 38 females, taken without selection from the several laboratories and examined expressly for the thymus. Twenty-two (15 males and 7 females) have persistent thymic ducts. Nine contain extensive cystic spaces, of which three contain no formed Hassall's corpuscles. Nineteen therefore have both duct spaces and formed Hassall's corpuscles. As regards the development of

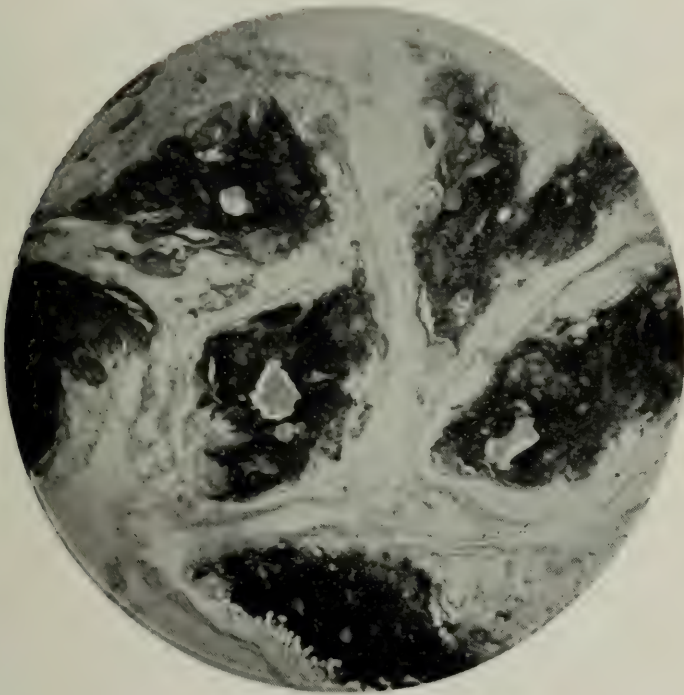


Fig. 1

Thymus of dog, showing duct-like spaces in the thymic lobules.

the thymic lymphoid tissue, two specimens contained both well developed lymphoid tissue and duct spaces, while in the remaining 20 the lymphoid tissue was either unevolutionary or had never been highly developed. While it is possible that the best de-

veloped of lymphoid tissue is favored by the normal development of the Hassall's corpuscles, with our material this is only a possibility.\* (2) Series A—177 specimens taken as part of the routine post mortem examination of dogs used in other work. Thirty-six specimens have duct remnants. In 8 the cystic spaces were very extensive and the lymphoid tissue very atrophic. In 5 of the 8 with extensive cystic spaces, no evidence of formed Hassell's corpuscles was present. The number of Hassall's corpuscles is in general inversely proportional to the number and size of the ducts. Regarding the relation of the thymic lymphoid tissue development to the extent of duct persistence, the tendency, as in Series T, is for the best development of lymphoid tissue to be associated with the best development of Hassall's corpuscles.

In both Series T, and Series A, notes were made of the weights and anatomical state of the thyroids, together with the sex of the animals, but there was no evidence of any relationship between the thyroid state or sex and the presence or absence of ducts in the thymus.

*Chick Thymus Glands* (adults)—79 specimens—In 5 instances the slightest evidence of duct remnants were seen. All specimens contain approximately the same relative number of Hassall's corpuscles. The Hassall's corpuscles in chicks are small, and usually lack the concentric arrangement and hyalinized appearance seen in mammals, possibly because the thymus persists as an active organ.

*Human Thymus Glands*—126 specimens from autopsies. In but one instance—that of a girl 11 years old—was there any evidence of ducts. In this case there were both well formed Hassall's corpuscles and small duct-like remnants widely scattered throughout the gland but surrounded by well developed zones of lymphoid tissue.

*Anatomy of Hassall's corpuscles*—(a) The most common form seen in the adult thymus of man, the dog, the sheep, the ox, et cetera, is a rounded or slightly elongated island of endodermal cells, varying from 0.025—0.1 mm. in diameter, and surrounded

---

\*FOOT NOTE—*Parathyroids* embedded in the thymus were found accidentally in the portion taken for section in two instances. Two transverse sections of the thymus area were taken in each case, and therefore only a small portion of the thymus was examined. The thymus is a common location for accessory parathyroids.



by a delicate fibrous capsule—the remains of the limiting membrane of the embryologic tubule or cord. Within this delicate fibrous capsule are several layers of large crescentric epithelial cells concentrically placed within the capsule, and in the center of which is a mass of nuclear debris and some dense hyaline cystoplasmic or plasmic remains. The outermost cells lying just

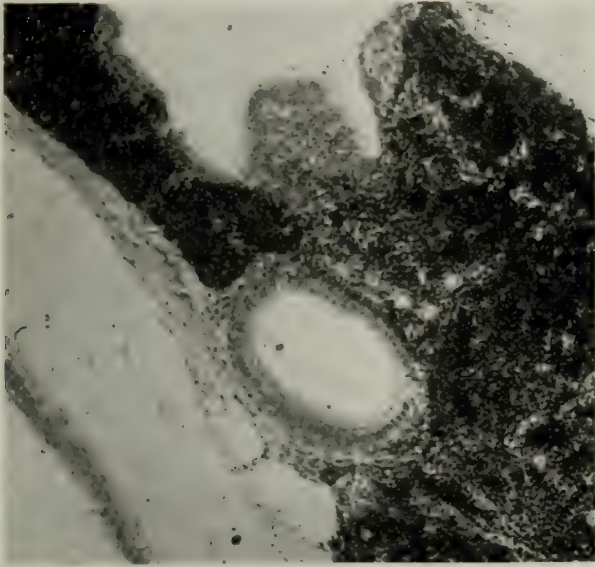


Fig. 2

Higher magnification, showing the ciliated columnal epithelium.

within the capsule usually have the best preserved nuclei and cytoplasm while the remaining layers show progressively increasing veratinization. Departures from this type are frequent. (*b*) Another common type of Hassall's corpuscles seen especially in man consists of a delicate fibrous capsule with a single layer of flattened partially degenerated cells, and the rest of the space filled with granular, cheesy, albuminoid debris, in which the outlines of swollen, degenerated, epithelial cells and leucocytes occasionally may be made out. They resemble somewhat minute sebaceous cysts. These cyst-like Hassall's corpuscles may reach 1 mm. in diameter and present the gross appearance of milary abscesses—the so-called Dubois abscesses. Chiari<sup>4</sup> has recently carefully studied this form and has shown that they are not broken down gummata, as Dubois believed, but represent a special type of metamorphosis in which hydration of the epithelial cells instead of desiccation take place. (*c*) Another form of Hassall's corpuscles seen especially in the very young mammal, and which is the usual form in birds, consists of nests of well preserved

polygonal epithelial cells with slight or no evidence of compression or hyalinization. (d) In addition to the above so-called normal forms, one sees duct-like spaces and remnants in which all stages of the transformation into true Hassall's corpuscles may be made out. Schambacher<sup>5</sup> has recently made a very careful study of these persistent ducts in the human thymus. They are comparatively rare in man while in dogs they are very common.

*Origin of Hassall's Corpuscles*—(1) The view supported by Afanassiew, Cornil and Ranvier is now of historical interest only. Attempts to inject these structures by way of the blood vessels have invariably been failures. Also, the Hassall's corpuscles are most numerous and best developed, on the average, at a much earlier period in life than the occurrence of obliterative changes in the vessels or the normal involution of the lymphoid elements. During involution of the thymus the vessels undergo obliterative changes quite similar to those seen in the involuting uterus and may come to resemble somewhat true Hassall's corpuscles.

(2) It is now generally accepted that the corpuscles arise for the original thymic anlage which is of entodermal origin from the 3rd pair of gill clefts (the thymus anlagen from the 4th gill clefts are negligible in mammals as regards the thymus as an organ). It is the prevailing opinion at present that the thymus reticulum also is derived from the endoderm, and Hammar, on the basis of his extensive studies, states that Hassall's corpuscles arise from the proliferation of single reticulum cells during the period of active development of the thymus.

(3) This is where the division of opinion occurs, since it does not explain the fate of the original thymic ducts, nor the presence after birth of the developmental abnormality of extensive duct-like remnants in 20 to 25 per cent of the thymus glands of dogs with a corresponding decrease in true Hassall's corpuscles. As the literature reports indicate and our own observations confirm, all mammals show this developmental defect to some extent. It is difficult to understand how such orderly arranged columnar and ciliated epithelial lined glandular spaces could arise from single cells already differentiated toward reticulum formation. Then, too, other observers have noted, and in my series it is most striking, that the number of well formed Hassall's corpuscles varies inversely with the number of duct remnants.



Schambacher has shown in human thymus glands that all degrees of Hassall's corpuscle formation, from true ducts to true Hassall's corpuscles, may be present in the same gland. In

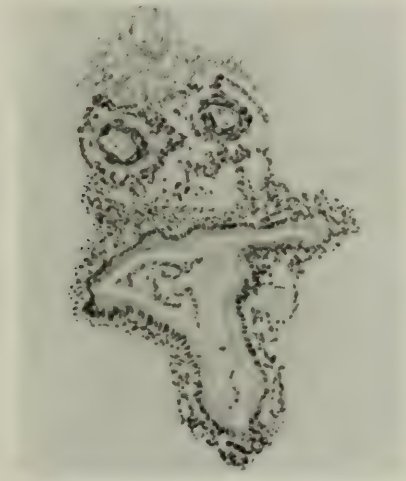


Fig. 3

Projection sketch of duct-like space with colloid-like contents in which are leucocytes and desquamated epithelial cells. Surrounding lymphoid tissue slightly atrophic and thickening of the blood vessels.

dogs this is of much more frequent occurrence, so that in a large series of glands one sees instances where the duct remnants are so extensive that no formed Hassall's corpuscles are present, and in a larger group of cases still both ducts and formed Hassall's corpuscles are present, while in a third and still larger group only formed Hassall's corpuscles are present.

Lymphoid tissue is arranged about the duct-like spaces just as it is about the well-formed Hassall's corpuscles. Hence, the ducts occupy the same relative positions in the thymus that the normal Hassall's corpuscles do. It has seemed that in those cases with marked development of the ducts the lymphoid tissue was not so well developed as in the cases where the Hassall's corpuscles were well formed. The relationship of the ducts to the Hassall's corpuscles is so uniform and constant that whatever explanation suffices for one will suffice for the other.

The thymic tracts in the beginning are tubules. These primary tubules give rise, in early embryonic life, to secondary epithelial cords out of which the Hassall's corpuscles are formed when they are broken up into islands by the ingrowth of connective tissue. There is general agreement that these epithelial cords are potentially capable of differentiating into tubules just as the parent tubules may be so differentiated in the beginning.

Any explanation as to the cause of this further differentiation in some instances and its absence in others, as to the relative frequency in some animals and its relative rarity in others, must

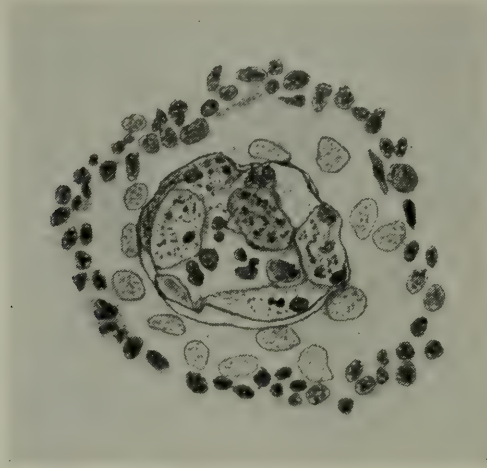


Fig 4

Projection sketch of a Hassall's corpuscle with evidence of the original duct lumen present.

take into account some physiological stimulus as the potent factor controlling the degree of anatomical differentiation. The thyroid is a notable example of this kind of control over the development and fate of its tissues. Thus the thyroglossal

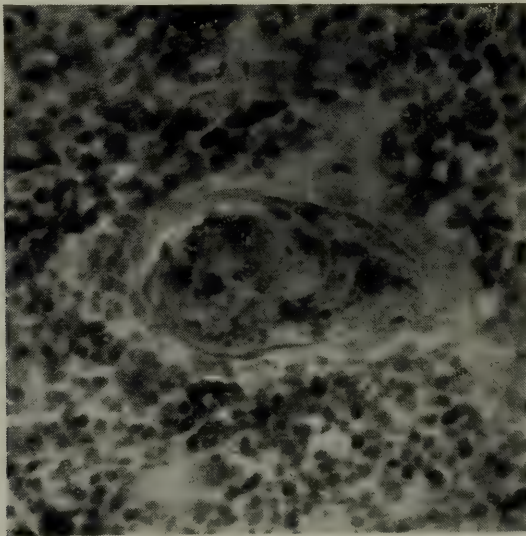


Fig. 5

Elongated Hassall's corpuscle from a dog, with core composed of the compressed contents of the pre-existing tubule.

tract normally undergoes total absorption in the second and third months of intra-uterine life, but under what appears to be the stimulus of functional necessity such absorption may be delayed or wholly prevented. In markedly goitrous districts it



may be present in 90 per cent of the cases coming to autopsy, while in non-goitrous districts such persistence does not occur. In other words, the development of permanent thyroid tissue in the thyro-glossal tract is associated with the overgrowth of the whole thyroid anlage at a time before the tract should be absorbed. It is probably some such regulatory process that determines in a given thymus whether further differentiation of the cords into tubules is to occur or whether involution is to begin before such differentiation has taken place. The nature of this stimulus is unknown, but it is suggested that it is an integral part of the mechanism controlling thymus function. According to this view, whether the Hassall's corpuscle is a tubule or a solid epithelial mass would depend largely on the degree of epithelial differentiation at the time the involution began.

One sees in mammals, especially dogs, a complete series of Hassall's corpuscles ranging from the highest differentiation into tubules lined with ciliated columnar epithelium and containing epithelial cells, leucocytes and albuminous debris, downward through smaller tubules with flattened hyalin epithelial lining and a core of compressed hyalinized cytoplasmic and nuclear debris (the remains of the tubular contents), and lastly well formed hyalinized concentric corpuscles where no trace of a previous tubular differentiation may be made out. The occurrence of this series of anatomical changes could best be explained on the theory that both the ducts and the cords arise from the same tissue and undergo a similar involution, which, in the case of the cords, results in the formation of the so-called typical Hassall's corpuscles before birth, in the case of the small ducts also results in the formation of fairly typical Hassall's corpuscles, the development of which may continue after birth, and lastly in the case of the larger ducts in the failure to reach that degree of involution even during extra-uterine life.

The formation of Hassall's corpuscles in an involutionary and regressive process. It begins early in foetal life with a shrinkage of the cells of the primary tubules and epithelial cords and their compression by the developing lymphoid tissue. Next these masses pass through a stage of hyalin transformation or keratinization (in man not infrequently a liquifaction takes place instead of desiccation, and cyst-like types of Hassall's corpuscles are formed as already mentioned). Still later, during the involution of the lymphoid tissue calcification may occur, and many

are wholly absorbed. This sequence of degenerative changes is the usual physiological process utilized by the organism generally in its attempt to eliminate inactive tissues. Regeneration of tissues thus degenerated is unknown, and while it has been stated to occur in Hassall's corpuscles in association with regeneration of the lymphoid tissue of the thymus, the evidence is quite against it. There is no well-founded experimental evidence that the thymus lymphoid cells can undergo secondary regeneration. In certain diseases in man, as acromegaly, myxedema, Basedow's syndrome, Addison's disease, myasthenia gravis, etc., following Marie's<sup>6</sup> view it is believed to occur. On the basis of a considerable acquaintance with Basedow's syndrome, I am inclined to this belief also in the case of this particular syndrome, and in such cases one may see very marked lymphoid hyperplasia (?) (persistence) with the Hassall's corpuscles reduced in number and very atrophic—a condition never seen during the fullest development of the organ in early life.\*

### Summary

Normal Hassall's corpuscles represent the atrophic and hyalinized remains of the embryologic thymic epithelial tubules and cords. The frequency of atypical development of Hassall's corpuscles varies in different species of animals. In dogs duct-like epithelial lined spaces were present in 58 of 275 cases, or about 21 per cent, while in man they were present in one of 126 autopsies. In the sheep and chick the series is too small for percentage consideration. Starting with the embryonic epithelial tubules and cords, there is a considerable range of possible morphologic changes. Thus the solid cords may differentiate into tubules before the involutionary process starts, or the involutionary process may start before tubular formation takes place. In the latter case, which even in dogs is about 80 per cent of all cases, typical Hassall's corpuscles are formed, while in the former, varying degrees of atypical Hassall's corpuscles are formed, depending on the extent of the tubular differentiation before involution begins.

---

\*In a recent paper, Hart<sup>7</sup> expresses the view that the Hassall's corpuscles are physiologically active throughout life and may even be independent organs related to the thymus in some such way as the Islands of Langerhaus are to the pancreas:



## Literature

1. Afanassiew: Ueber die Konzentrischen Korper der Thymus. *Archiv. f. Mikrosk. Anat.*, 1877, xiv, 1-6.
2. Cornil et Ranvier: *Manuel d'histologie Pathologique*, 1869.
3. Hammar: Zur Histogenese und Involution der Thymusdrüse. *Anat. Anz.*, 1905, xxvii, 23-85.
4. Chiari: Ueber Cysten Bildung in der menschlicher Thymus zugleich ein Beitrage zur Lehre von der Duboischen Abscessen. *Zeitschr. f. Heilkunde*, 1894, xv, 403.
5. Schambacher: Ueber die Persistenz von Drüsenkanalen in der Thymus und ihre Beziehung zur Entstehung der Hassallschen Korperchen. *Virchow's Archiv.*, 1903, clxxii, 368.
6. Marie: La reviviscence du Thymus. *Gaz. des Hop.*, 1913, lxvi, 202.
7. Hart: Thymus Studien iv: die Hassallschen Korperchen. *Virchow's Archiv.*, 1914, ccxvii, 239.

---

**Gas Gangrene in War**—The worst septic complication of wounds that has been seen frequently during the present war is the so-called gas gangrene. There are a series of forms of this, and not all the cases are by any means necessarily identical with acute emphysematous gangrene. The cases as a rule begin as a cellulitis with much gas formation and rapid sloughing of tissues, and then gangrene eventually develops, running a rapid course. The causative agent has always so far been found to be some form of an anaerobic organism. It is not always the same organism. Pus is not produced in the early stages, but only sloughing and gas formation. Later on, if there is a reaction toward recovery, the pyogenic organisms gain a foothold and predominate in the condition, and pus is freely produced in the devitalized tissues. Frequent irrigation with hydrogen peroxid has done the most good. A stream of oxygen gas directly on the wound has given good results. "Lately Sir Almroth Wright has suggested placing gauze, wrung out of 5 per cent salt solution, between the muscles and connective tissue planes, in order to encourage the out-pouring of lymph. This has appeared to be an excellent method of treatment."—*Journal American Medical Association*.

---

**Typhoid Fever in the English Army**.—It is stated in *Nature* that in answer to a question as to typhoid fever in the army, asked in the House of Commons on February 8, Mr. Tennant, Under-secretary of State for War, said: "Of the 421 cases of typhoid in the present campaign among British troops, 305 cases were in men who were not inoculated within two years. In the 421 cases there have been 35 deaths. Of these deaths 34 were men who had not been inoculated within two years. Only one death occurred among patients who were inoculated, and that man had been only inoculated once, instead of the proper number of times—namely, twice." Replying to criticisms against inoculation made by Mr. Chancellor in the House of Commons on February 9, Doctor Addison pointed out that in the South African war there were 58,000 cases of typhoid—more than an Army Corps—whereas in the great force now in France and Belgium, and after six months, including three months of atrocious weather, there have only been 421 cases among the troops. The total losses in South Africa were 22,000, of which about 14,000 deaths were from diseases and 8,000 of these were from typhoid.

## CYTOLOGY OF CEREBROSPINAL FLUID

By O. P. BIGELOW, A. B., M. D., Visiting Neurologist to the Cleveland City Hospital; Assistant Neurologist to the Lakeside Hospital, Cleveland

The most frequent pathological condition found in cerebrospinal fluid is an increase in number, often accompanied by a change in character, of the cells floating in it. These changes are easily determined; the greatest danger, if one is not familiar with the work, is the mistaking of red blood cells or particles of foreign substances for leukocytes, and five or six such mistakes in examining a cubic millimeter of fluid may make a great difference in the interpretation of the result.

The method used in making the six hundred cell counts reported here is as follows: If an ordinary Thoma-Zeiss counting chamber is used the spinal fluid is diluted with an equal volume of 1 per cent acetic acid solution, rather deeply colored with Gentian violet. These fluids are shaken together in a test tube and a sufficient quantity of the mixture is transferred, by means of a platinum loop, to the counting chamber. If a Türk counting chamber is used, ten parts of spinal fluid, measured by means of a graduated pipette or by dropping from a medicine dropper, are diluted with eight parts of the diluent. One preparation on the slide represents one-half of a cubic millimeter of spinal fluid. By the use of the Fuchs-Rosenthal counting chamber, which is two-tenths of a millimeter deep, a whole cubic millimeter of spinal fluid can be examined in one preparation. The intermediate power of the microscope is used in counting the cells.

The advantages of this technique are as follows: A few red blood cells may be present, due to contamination from tissues wounded by the needle; and these may be mistaken for leukocytes if the fluid is not sufficiently diluted to take them. Slight dilution with strong acetic acid is not as effective for this purpose as the use of a larger amount of dilute acetic, the cells being destroyed by the lowered concentration of salts in the surrounding medium; and, since we must use a diluent, half and half dilution gives us the greatest freedom from fractions in computing the result. If it is desirable to count the red cells, this can be done by examining the undiluted spinal fluid. Slight staining with Gentian violet makes the cells more prominent, aids in distinguishing them from particles of debris and enables us to distinguish different types of cells.



There are a few cells to be found in normal fluid. Four patients without nervous or mental disease showed 1, 1, 2 and 2 cells per c.m.m. respectively; and in 140 specimens of fluid from cases of dementia precox and manic-depressive insanity, where the meninges are assumed to be normal, the counts ranged from no cells in ten c.m.m. to 7 per c.m.m., with an average of 1.25. In only two cases was there a count of over 5 cells.

As to the type of cells found, 92 per cent of those observed were of the small, round type, with little or no cytoplasm visible around the nucleus. They are probably derived, by desquamation, from the surfaces bathed by the cerebrospinal fluid. The remaining 8 per cent seemed to be leukocytes from the blood, most of which had undergone the degenerative changes to be described later.

In tabulating the remaining cases there are grouped together four of brain tumor and four of uremia. These showed counts ranging from none in ten c.m.m. to three per c.m.m., with an average of 1.08. The reason for grouping these two diseases together is that there is usually an increase in the amount of fluid, and I believe that the cell count will be found low in most cases, as these few would indicate, simply as a result of dilution.

The next group is made up of diseases in which we are hardly justified in assuming normal meninges, although they doubtless were normal in most of the cases included. There are four examinations in amentia, three in imbecility, eleven in chronic alcoholism, six in other drug addictions, forty-three in epilepsy, four in presenile insanity, twenty-four in arteriosclerotic insanity, twenty-seven in senile dementia and five in old transverse myelitis. These 127 examinations showed cell counts ranging from none in ten c.m.m. to eight per c.m.m., with an average of 1.9. Only three cases, two of hemiplegia (classified as arteriosclerotic insanity) and one of delirium tremens (chronic alcoholism) showed more than five cells per c.m.m. The diseases in this group may be considered, therefore, as giving normal cell counts, although the average is a little above that of the first group.

The cells found were mostly of the simple round type, but 18 per cent of those observed showed some variation, a considerably higher percentage than in the first group.

A case of Friedrich's ataxia showed one round cell to the c.m.m.

Hemorrhage into the dural sac or onto an internal surface of the brain results in an increased number of leukocytes and the presence of red blood corpuscles in the fluid. The following six cases, not complicated by other disease of the central nervous system which would have an appreciable influence on the cell count, illustrate this condition:

Case 1. Lumbar puncture a few hours after onset of symptoms; fluid slightly turbid with blood; 973 red cells and 0.33 leukocyte per c.m.m.

Case 2. Lumbar puncture several days after fall on back; fluid slightly yellow; 460 red cells and 9.5 leukocytes per c.m.m.

Case 3. Fluid obtained a few hours after stroke; fairly heavy blood tinge; 7 leukocytes per c.m.m, 3 round cells, 2 evident polymorphonuclears and 2 resembling mononuclears from blood.

Case 4. Fluid obtained seven days after onset of symptoms; yellowish color; 17 leukocytes, 12 of them round cells and 5 resembling mononuclears from blood.

Case 5. Fluid taken five days after stroke showed a heavy blood tinge, 18,900 red cells and 186 leukocytes. Thirty-six of the latter were round cells, 76 had larger cell bodies and 34 were evidently polymorphonuclears showing various degrees of degeneration. The fluid was the color of moderately strong tea after the cells had settled out.

A second puncture four days later showed 320 red cells and 19 leukocytes, 13 of which were round cells, 4 with large cell bodies and 2 evident polymorphonuclears; color in supernatant fluid less intense.

A blood count showed 6,370,000 red cells and 8,400 leukocytes.

Case 6. Lumbar puncture seven days after beginning of symptoms showed a deep yellow color in the fluid, 570 red cells and 3 leukocytes.

A second puncture three days later showed clear, yellow fluid. The patient coughed while the needle was in situ and some turbidity due to blood appeared, but the fluid later ran clear again. The clear fluid showed 283 red cells and 0.5 leukocytes; the turbid fluid, 2,220 red cells and 4.5 leukocytes per c.m.m.

A third puncture two days later showed 3,020 red cells and 5.5 leukocytes.



According to these six cases, the cells found immediately after a hemorrhage are about what we would expect, in number and type, to be contained in the blood which has escaped. A slight escape of blood may result in no appreciable increase, as seen in Case 1. But after a few days the ratio of leukocytes to red cells rises and likewise that of round cells to polymorphonuclears, until finally none but round cells remain. It seems evident that these changes are due to a longer persistence of some types of cells than of others, a greater resistance to the disintegrating influence of cerebrospinal fluid. Just how long the round cells may persist in numbers above normal I have not had an opportunity to determine. The yellow, orange-yellow or brownish-yellow colors which appear in the fluid indicate roughly, by the depth of color, the number of red cells which are being destroyed. The leukocyte count is slightly complicated, even in normal cases, by the probable presence of a few round cells before the hemorrhage occurred, and very much so in a disease such as paresis, where there is a constant pleocytosis from other causes. A persistent hemorrhage, by keeping up a fresh supply of all forms of cells, also complicates the findings.

Every inflammatory process which involves the meninges or ependyma seems to produce an increase in the cell count, dependent in degree upon the severity, extent and, possibly, the situation of the process, granting that the fluid for examination is obtained from the lumbar region. The following diseases are arranged in order depending upon the degree of pleocytosis (increase of cells) found in them.

Ten cases of multiple neuritis, mostly of alcoholic origin, several of which showed symptoms of Korssakow's psychosis, gave counts ranging from 1 to 12, with an average of 4.6. Four of them showed five or more cells per c.m.m.

This slight pleocytosis in part of the cases probably results from an inflammation of those portions of the spinal nerves which are exposed to the fluid in their course through the spinal canal. It seems very plausible that this should cause the desquamation of a few cells from their covering membrane. The situation of the *canda equina*, the fibres of which offer most of the exposed surface, is such too that any cells cast off from it fall directly into the portion of the fluid reached by our needle.

Three cases of multiple sclerosis gave counts of 4, 7.5 and 11 respectively, probably due to involvement of small areas of meninges or ependyma by the sclerotic process.

Four cases of herpes zoster showed 10, 12, 20 and 31 cells respectively. The probable cause of this pleocytosis is an extension of the inflammatory process in the spinal ganglia to the prolongations of the dura which cover them.

One hundred and seventy specimens of fluid from seventy cases of paresis showed cell counts ranging from 5 to 250, with an average of 31 per c.m.m. Most cases are characterized by a low, intermediate or high count throughout their course; but almost all show a gradual increase as time goes on, and certain circumstances tend to cause temporary fluctuations up or down. Some of these latter, according to my experience, are the following:

Slight hemorrhages into the diseased meninges are not at all rare, as shown by the frequency with which they are found at autopsy and with which we find slight staining with hemoglobin of the fluid obtained by lumbar puncture. Leukocytes must, of course, enter with the blood at these times.

Treatment with potassium iodid in large doses causes a temporary increase of cells in some cases; and with mercury or salvarsan a decrease in most of them.

Convulsive seizures are usually accompanied by a decrease from the customary pleocytosis.

Suppuration (of a toe joint and adjacent skin) was accompanied by a decreased count in one case. I mention this because the same observation has been made by others, and suppuration has ever been artificially produced for the beneficial effect that it might have on the course of the disease. (Kraeplin's "Psychiatrie," 8 te. Auflage, Bd. II, p. 527.)

Early cases, i. e., with a duration of less than a year, and those with a duration of over three years show a higher average count than those of moderate duration.

Fourteen specimens of spinal fluid from women gave an average count of 61, as compared with an average of 28 from male patients.

The general mental and physical condition does not correspond with the cell count, some of the most demented patients showing the lowest counts.

A record of 3,527 cells shows 78 per cent of them to have been of the round type, with little or no apparent cytoplasm



around the nucleus. The nuclei in 80 per cent of these were nearly or quite spherical, in 20 per cent somewhat irregular, appearing triangular, elongated, notched or kidney-shaped in outline; a few had two nuclei. Some of the cells included in this group are probably lymphocytes which have entered directly from the blood; some may be degenerated nuclei from polymorphonuclear leukocytes and plasma cells; but they are mostly derived, I believe, by a process of desquamation from the diseased coverings of the brain.

A second group, embracing 15.5 per cent of the whole number, is made up of those with a large cell body and a nearly or quite spherical nucleus. The nucleus is usually eccentrically placed. These cells are absent in about 10 per cent of all cases. Part of them seem to be degenerated leukocytes from the blood and the rest plasma cells. These latter, cells with spherical nuclei and a considerable amount of cytoplasm, are found in largest numbers in the paretic brain, but also in some other diseases. When seen in the tissues they are smaller than we find them here and flattened on one or more sides by contact with their fellows; but in the spinal fluid their contents are probably increased by osmosis, they become globular in shape and the nucleus is pushed against or even part way through the cell wall. Possibly the nucleus is extruded entirely in the course of time. It would be easy to dispose of this whole second group by calling them plasma cells, which they resemble more than any other type, if it were not for the fact that similar forms are found in the spinal fluid of most other diseases, especially after the escape of blood into the fluid.

A third group, embracing 6.5 per cent of the whole number, includes cells with lobulated nuclei and large cell bodies, often irregular in outline. These seem to be polymorphonuclear leukocytes from the blood. Many of them certainly are, while others are much distorted from their original shape. They are relatively less numerous when the count is low and are absent altogether in 30 per cent of the cases. The change in shape which they undergo after entering the fluid is similar to that described above for plasma cells, and seems to be the result of osmosis. The cell swells and becomes globular in shape, sometimes with secondary swellings, as if there had been weak spots in the wall which bulged out under pressure from within. The nucleus may be pushed partly through the cell wall or even lie quite out-

side the cell, and is shrunken or pressed together into a small volume. Sometimes we see what appear to be swollen cell bodies without nuclei adhering to other cells, and rarely what seems to be a phagocytic cell enclosing another one.

One gets the impression from the types of cells found at successive punctures on the same patient that there is a steady supply of round cells from some source, undoubtedly the infiltrated meninges and ependyma, and that fluctuations in the cell count are largely due to accessions from other sources. The following four cases illustrate this point. The top line of figures gives the total cell count on successive occasions, usually about a month apart; the second line, the number of cells other than of the round type; and the third line, the number of round cells.

#### CASE I.

32	43	37	15	24	22	58	50	46	52
1	5	4	0	3	1	17	9	2	8
31	38	34	15	21	21	41	41	44	44

Mercury was given from six days before the third count until after the fourth one.

#### CASE II.

6	6	20	20	34	9	29	31
0	1	11	5	12	2	11	13
6	5	9	15	22	7	18	18

Suppuration of a toe joint began shortly before the sixth count was made.

#### CASE III.

60	21	33
27	0	6
33	21	27

#### CASE IV.

10	22	11
2	10	4
8	12	7

In Case IV the three punctures were all performed within a month. A slight hemorrhage due to the injury of a meningeal vessel by a needle occurred between the first and second punctures, so that we know the source of the extra cells in this case. The ten leukocytes found at the second puncture did not differ from the "second group" cells ordinarily found in paresis.

Fifteen cases of tabes dorsalis showed counts ranging from 11 to 122, with an average of 56 per c.m.m. The cells were of the same type as those found in paresis. The higher average count as compared to that disease may be due to the situation of the pathological process nearer the point of withdrawal of fluid.



Eighty-two examinations in twenty-nine cases of cerebrospinal syphilis showed counts ranging from 1 to 514, with an average of 86. This includes counts made both before and after treatment. The average of the first examination made on these patients, at a time when they had received little or no treatment, is much higher, 118 cells per c.m.m. The pleocytosis is more responsive to treatment than is the case in paresis, and, moreover, usually has a tendency to diminish down to a certain point after the first acute stage is over, even without treatment.

As to the type of cells found, leukocytes, especially those belonging to the third group, are relatively more numerous here than in paresis, even in cases where the total cell count is the same.

The high average count as compared to that found in paresis is evidently due to a more acute process and possibly closer proximity (at the base of the brain) to the site of withdrawal of fluid. But to offset these factors there is often, in the gummatous form of the disease, but a small area of surface involved, and such cases may show only a slight pleocytosis.

Acute meningitis shows a very high average count, but there are marked variations in different cases. This is explained by corresponding variations in the extent, severity and location of the pathological process. It is possible that inflammatory swelling or infiltration at the base of the brain may interfere with the diffusion of cells downward in some cases.

In three patients, aged five, eight and eleven years, with lobar pneumonia and clinical signs of meningitis, cell counts of 5, 7 and 38 were found; no organisms were visible in stained smears. All three patients died without recovering consciousness. Two adult patients with pneumococcus meningitis showed fluid cloudy with cells. A count in one case showed 5,200, mostly polymorphonuclears.

Four cases of tuberculous meningitis showed counts corresponding rather closely with the extent of involvement. A young man with advanced pulmonary tuberculosis had a "stroke" resulting in hemiplegia and death. There was a cell count of sixteen. No autopsy was obtained, but judging from clinical signs it is probable that there was a tuberculoma pressing on the medulla. The second case, with a count of 320, showed at autopsy the same condition which is assumed to have been present in the first, i. e., a tuberculoma on the under surface of the cere-

bellum involving the meninges. There was also a small amount of exudate on the surface of the pons and medulla. The third patient showed successive counts of 650 and 520, 61 per cent of the round type at the first examination and a higher percentage at the second, which was made five days later. Autopsy revealed involvement of both cerebral and spinal meninges. The fourth patient, with a cell count of 1,140, showed at autopsy numerous abscesses in the brain, several of which had reached the surfaces.

A case of influenza meningitis showed successive counts of 1,307, 707 and 200 cells, mostly polymorphonuclears at first; but the percentage of round cells rose rapidly as the count declined.

Death is usually followed by an increased cell count, as the following fifteen cases show. The pleocytosis seems to be steadily progressive when the meninges are diseased, but this is not so apparent where they are normal. It is probable, however, that successive punctures in individual cases would show some progressive rise in most of them, even with normal meninges before death.

TABLE I.

Case	Diagnosis	Cell count before death	Time of puncture after death	Cell Count
1.	Cerebral Arteriosclerosis	1.5	1 hour	24
2.	Imbecility		1 hour	5
			(Body warm)	
3.	Dement. Precox.	1	1 hour	23
4.	Dement. Precox.		1½ hours	10
5.	Dement. Precox.		2 hours	4
			(Body warm)	
6.	Alcoholism	1.5	2½ hours	2
7.	Senile Dement.		4 hours	10
8.	Dement. Precox.	0.5	8 hours	162
9.	Paresis	12	10 minutes	76
10.	Paresis	14	15 minutes	104
11.	Paresis	36	20 minutes	139
12.	Paresis	33	30 minutes	226
9.	Paresis	12	1 hour	270
13.	Paresis	26	4 hours	410
14.	Tabes	87	1 hour	760
15.	Cerebral Lues	78	3 hours	442



The cells show various degenerative changes. Those of the round type are more variable in size and irregular in outline; some resembling plasma cells appear in cases with normal meninges; and what seem to be very large cells with as many as five nuclei have been observed in cases of paresis and cerebral lues. Leukocytes from the blood, or at least cells which can be recognized as such, are not increased in number. The staining reaction is sometimes poor.

As to the possibility of reducing the cell count to normal by repeated punctures when there is a moderate pleocytosis, as in paresis—this might result temporarily if one set out deliberately to bring it about, but it seems hardly possible for it to occur under ordinary conditions. In three cases where two punctures were performed only one day apart, the second count showed a few more cells than the first in all of them. In two cases five punctures were performed in six weeks; in two others, four in three weeks, and in one, six in five weeks. Three of these showed a few less cells at the end than at the beginning, and two a few more, but in no case did they reach normal, and such fluctuations as did occur could be explained by other circumstances.

It is not safe to delay the examination of spinal fluid over six hours after it is obtained, as experiment shows that after six there is an average decrease of 13 per cent in the number of cells, and, after twelve hours, of 40 per cent. This is probably due to a continuation of the destructive action of the fluid, which, as explained before, is constantly reducing the number of cells. Whether this process is swifter "in vitro" is difficult to determine, as we have no means of measuring the accessions of cells from the meninges while the fluid is in contact with them.

8911 St. Clair Avenue.

---

**Psoriasis.**—E. D. Holland, Hot Springs, Ark., reports three cases of psoriasis, treated by vaccines with success. The first patient had developed tonsillitis and bronchitis, during which the psoriasis seemed to suggest to him that it might be in this case an infection. He therefore made an autogenous vaccine from a culture from the tonsils and ceased treating the stomach, which he had begun some five weeks before. In two weeks after the use of vaccines, the psoriasis had entirely cleared up. Eight months later, the patient reported it had not reappeared. The other two cases were treated with a mixed vaccine of streptococcus, staphylococcus and *Micrococcus catarrhalis*, with similar results. He is now giving the remedy a more extensive test and hopes to report further successes.—J. A. M. A.

## THE INLAY BONE GRAFT\*

By WALTER G. STERN, M. D., F. A. C. S., Orthopedic Surgeon to the Mt. Sinai Hospital and the East Side Free Dispensary, Cleveland, Ohio.

Of the tissues most successfully used as material for grafting, two—bone and fascia—are of mesoblastic origin, and their mode of “taking” differs markedly from that of the skin. It is an almost needless repetition to attempt to present in full the many theories of the fate of transplanted bone or fascia; and yet it is not without serious practical importance, to have a clear understanding of the great problem which is puzzling so many patient investigators.

In the matter of fascia and fat transplants, a histologically simple problem to solve—Murphy claims that the transplants live and are gradually metamorphosed by use into a tissue resembling that which they substitute. For instance, it is claimed that fascia and fat are finally converted, in the knee joint, into a sort of fibrous capsule and a hygroma resembling synovia. On the other hand, Allison and his co-workers show that pedunculated flaps, with or without fat, free fascia flaps, et cetera, rarely live *per se*, but set up in the tissues about them a sort of fibrous tissue reaction and are finally encapsulated and *then* either extrude or absorb. Thus, Allison coincides with Baer of Baltimore, who uses a foreign body—chromicized pig’s bladder—for the same purpose, with equally good results.

In the matter of bone—a highly specialized mesoblastic tissue—the opinion of experimentors is equally at variance, and the function of the periosteum, endosteum, bone and bone-marrow in the life and growth of the grafts is not agreed upon by any two schools of observers. In brief, it may be stated that Macewen believes “that the periosteum, whether in situ or in transplant, has absolutely no osteogenetic function and that it acts merely as a limiting membrane to osteoblasts issuing from the interior . . . . diaphyseal bone grafts live and actively proliferate in their new surroundings with the same vigor as epidermal transplants—the vegetative capacity of the bone cell is as great as that of the epithelial cell.”

Barth and Axhausen hold that all the bone cells of the transplant necrose and must be replaced by a metaplasia of the

---

\*Read at meeting of Cleveland Academy of Medicine, January 16, 1915.



connective tissue cells of the implantation site, into osteoblasts. According to Barth and his followers macerated or boiled bone is just as good a "scaffold" as living bone with its periosteum; while Axhausen upholds the advisability of only transplanting living bone with its periosteum.

Albee shows that in some cases the transplant must stay alive along its whole extent, and shows a beautiful specimen in which a long transplant, fractured while being introduced, has united at the site of the fracture—which was at least three inches from either end of the transplant site.

Petrow claims that bare bone transplanted into muscles is replaced by new bone, while Murphy and Albee contend that the transplant must be placed into intimate contact with freshly cut healthy bone or it is absorbed and lost.

The latest work, among which is that of Mayer and Wehner, would tend to show Macewen and Williams to be totally in the wrong. The periosteum, especially the Cambium layer, has specific osteogenetic functions, and it is from this layer, as well as from the endosteum lining the marrow cavity and Haversian canals, that the bone is regenerated.

2. That in bone transplants the adult bone cells give little evidence of activity, but the transplant dies in part and must be revascularized and revitalized.

3. This process is one of "creeping replacement" by young bone cells from the periosteum, endosteum and from the living bone against which graft is placed. The living osseous tissue advances into the old by the intercellular deposit of new bone, also by the direct advance of the young bone cells into the old lacunae. The bone-marrow of itself has no osteogenetic powers.

The practical lessons to be deduced from the foregoing contradicting theories, are that:

1. The transplant should consist of periosteum, bone and endosteum (to make sure of the latter, bone-marrow).

2. It should be transplanted fresh and without much trauma, and

3. Should be placed into intimate contact with freshly denuded healthy bone surfaces.

Such a bone graft is very resistant to infection, as has been repeatedly shown by many accidents in the operating-room, where the graft has fallen to the floor and has been washed off and then inserted, or where it is used to bridge over osteomyelitic or

tuberculous cavities, and in contra-distinction to the use of metal plates, in fresh fractures. It also stimulates an active osteogenesis on the part of the recipient bone itself. For many months, even years, such transplants do not cast as dense a radiographic shadow as its anatomical appearance and consistency warrants. This is as yet unexplained.

The advantage of autogenous over heterogenous grafts has not yet been fully settled. Albee claims successfully to have used the bones of a Negro child to replace those of a Caucasian, and *vice versa*, while Bevan believes that all autogenous grafts, skin as well as bone, to be far superior to heterogenous. It is conceded that animal grafts will not survive in man. It takes about six months for a large graft to be absolutely replaced and become an integral part of the osseous system.

The uses of the Inlay bone grafts are many and varied, the chief being in the treatment of certain fresh fractures, ununited fractures, congenital bone defects, fixation of paralytic joints, fixation of complex tuberculous joints, as in the wrist and spine, replacements of bone lost in osteo-sarcoma, trauma, osteomyelitis, osteitis fibrosa, et cetera, to enlarge various parts of the organism too small either congenitally or through disease, as in underdevelopment of the jaw, et cetera.

The technic of bone grafting is extremely simple, a suitable bed should be prepared by cleaning out all detritus and dead tissue, when necessary, and cutting at least two mortise holes in neighboring healthy bones, so that they will snugly embrace the grafted tenon.

2. Is the measuring of the length of the graft needed.

3. Removing the graft usually from the crest of the tibia with suitable instruments. (For this purpose, I strongly recommend the use of a motor saw, of which there are many models. The use of the saw does not endanger the bone to fracture, as does the broad chisel, nor does it leave the bone sore and painful. I have perfected a cheap and practical and above all an easily sterilizable and aseptic saw out of a Duntley Electric Drill. In it single and double saws, burrs, drills, reamers and rasps can be used and easily interchanged. A detailed description of this saw can be found in the *Journal of the American Medical Association* for April 4, 1914.)



4. Insertion of the graft into the mortise channels and fixation therein by suitable sutures or pegs.

For the fixation of fractures, fresh or old (the indications for which does not at present concern us), the bones are to be brought into alignment and a channel marked out on both fragments with the twin saw. Then with a single saw held in a slanting manner, so that the cut surfaces would tend to converge in the center of the bone, the cuts are deepened to the bone-marrow and the long pencils removed. In fresh fractures, when practicable, one channel is made longer than the other and the longer graft is shoved across the seat of the fracture into the mortise of the other fragment and securely held in place with suitable instruments. Small holes are drilled into the edges where the graft touches the slanting cut surface, about four to each fragment, and small pegs, sawn out of the unused graft, are driven into these holes, holding the graft firmly in place. The wound is then sewn up.

In old fractures the graft had better be cut from the tibia, as healthy bone (not to be found about an ununited fracture) is wanted. This is inserted into the channel and pegged as above. The size of the graft is first marked out by the twin saw.

The slanting surfaces prevent the graft from sinking into the marrow cavity, and the square pegs driven into round holes will not bind but rather make the "job" a very secure one.

The results of the bone grafting in fractures is most gratifying. The graft seems to prevent infection and stimulates osteogenesis. Cases which have been repeatedly plated, freshened, wired and subjected to other operations, are often united in a few months. In fresh fractures the metal plate technic is not to be compared in efficiency to the Inlay Graft.

In the cure of Pott's Disease the inlay graft has been most successful in securing absolute fixation, and the abolition even of the fine motion of respiration between the vertebrae. A curved incision is made to one side of the spine and then dissected toward the median line. The spines of sufficient vertebrae above and below the kyphos are split with a heavy knife and the cut deepened with a chisel to at least one-half inch. One-half is now broken over, the ligaments in the median line split to the next vertebrae, and this spine is split in the same manner as before. When the channel is completed a strip of triangular

lead tape heated to about 112 degrees is inserted to stop the hemorrhage, and then stay sutures of Kangaroo tendon or paraffine silk are thrown across from one-half of a spinous process to the other passing above the tape. These sutures are not tied.

The graft is now secured from the shin and, if necessary, is notched transversely to allow it to bend, or a bent graft is cut out of the tibia. While an assistant sews up the wound on the skin, the graft is inserted into the channel of the spine in the place occupied by lead tape and the sutures firmly tied across it. The fascia is now sewn up, the skin sutured and a plaster cast or bed made for the purpose of keeping the patient quiet. After three months rest in bed the patient is allowed up, with or without a brace, as conditions indicate.

In osteomyelitis, tuberculosis, osteo-sarcoma, osteitis fibrosa, et cetera, the diseased tissue is removed and a fresh surface is made by cutting the cortex with the twin saw, and the graft, obtained in the usual manner, inserted in such a manner that it not only bridges the cavity, but also exerts some longitudinal tension on the soft tissues. Enormous gaps have been successfully bridged over.

Congenitally small members can be enlarged by severing the bone with a saw and wedging the fragments apart by inserting a suitable bone graft and fixing the graft by the proper means. Absent head of the femur can be replaced by the head of the astragalus; absent fibulae substituted by grafts from the tibia, small inferior maxilla enlarged by the insertion of a piece of rib, et cetera. The acetabulum can be enlarged by pegging a graft to its upper surface, or new shelves for dislocated femuri made by the same method.

Many other examples could be given, but the technic is simple and can be varied to meet the requirements of the differing conditions. Although the grafts are very resistant to infection, rigid asepsis is to be insisted on. The failure of a graft to take, which will of course happen now and then, need not deter the operator from fixing the graft anew or even inserting another graft. The operation being in its infancy, great improvement in the technic is to be anticipated.

821 Schofield Building.



## PRECIPITATION OF SERUM-ALBUMIN AND GLUTIN BY ALKALOIDAL REAGENTS

By PAUL J. HANZLIK, M. D.

The study of the mechanism of the precipitation of proteins by so-called alkaloidal reagents (tannin, iodine potassium iodide, potassium ferrocyanide, potassium mercuric iodide, tungstate and phosphomolybdate) has received practically no attention from the standpoint of physical chemistry, especially the isoelectric point. According to Michaelis<sup>1</sup>, the isoelectric point of serum is the point where the number of positive and negative charges of electricity held by the protein ions are about equal, that is, at this point there is a maximum of neutral particles of protein. This lies approximately at the concentration of  $2.10^{-5}$  of acid, such as obtains in a mixture of equal parts of N/10 acetic acid and N/10 sodium acetate. Certain other phenomena which are exhibited by proteins at this point, according to Pauli<sup>2</sup> and his pupils, are a minimum of viscosity as shown by serum, a maximum of precipitation by ethyl alcohol, and maximum of dehydration. It would be interesting to know the behavior of other precipitants, such as the alkaloidal reagents, with respect to this point. This might also indicate whether the mechanism of precipitation by all alkaloidal reagents is the same or different. This has hitherto been regarded as identical.

In the experiments, the results of which only are to be reported, attempts have been made to ascertain where precipitation of serum and gluten takes place with respect to their isoelectric points, and how it is influenced by different degrees of acidity and the addition of salt. The conditions under which precipitation was observed have been expressed in a quantitative manner. That is, definite quantities of serum and gluten of known protein content were mixed with definite quantities of known strengths of acids, and to this the same quantity of the reagent of known strength was added. The total volume of the mixture was always the same. The effect of salt and concentration of protein was studied in a similar manner.

All experiments were performed at ordinary room temperature in test tubes. The precipitates were observed when freshly formed and at the end of twenty-four hours. However, as a rule, the precipitates remained unchanged on standing. Precipitation was regarded to have taken place when the mixture, upon

the addition of the reagent, became non-transparent. The different degrees of precipitation were expressed in ordinary terms. The reagents were previously rendered neutral to litmus by the addition of sodium hydroxid, and the strengths of these were usually 5 per cent. The horse-serum and glutin used in these experiments had been previously dialyzed for a period of five to six weeks, and were practically salt-free. The standard "buffer" mixtures of acetic acid and sodium acetate were prepared according to Sörenson<sup>3</sup>. In my work the concentration of sodium acetate in all experiments is always the same, only the variation in the acetate acid being present. The different concentrations of acetic and hydrochloric acids were prepared by dilution of standard solutions in the usual manner.

1. *Precipitation of Serum and Glutin in Mixtures of Acetic Acid and Sodium Acetate.*

In "buffer" mixtures of acetic acid and sodium acetate with proteins, the dissociated hydrogen ions are not bound by the protein, but are made available for the precipitation reaction with the alkaloidal reagents. It is thus possible to ascertain if precipitation is concerned: (1) with neutral participles of protein; (2) with positive protein ions; or (3) whether it depends upon the liberation of the free acid of the reagents. With this in view, experiments with horse-serum and glutin were made according to the method just described.

It was found that the precipitation of serum by the following reagents, iodine potassium iodid, potassium mercuric iodid, potassium ferrocyanid, sodium tungstate, and phosphomolybdate, takes place above the isoelectric point, and in the direction of higher concentrations of acetic acid; and that it increases as the acidity increases. Precipitation by the different reagents begins practically with the same mixture of acid and acetate, and the small variations which occur are probably within experimental error. Inasmuch as the dissociated acid is not bound to the protein ion under these conditions, it would seem to indicate that a certain amount of free and excess of acid is necessary for the formation of the insoluble protein compounds.

On the other hand, with tannin, the maximum of precipitation occurs at about the isoelectric point, and then diminishes on either side of it, that is, with either increased or decreased concentra-



tion of free acid. This would indicate that the mechanism of precipitation by tannin is different from that of the other alkaloidal reagents used.

With gluten, precipitation takes practically the same course as with serum. No precipitation was observed with iodine and potassium iodide and the ferrocyanide. Tannin exhibits here practically the same difference from the other reagents as with serum.

## 2. *Precipitation of Serum and Gluten by Alcohols in Mixtures of Acetic Acid and Acetate.*

It appears, then, that the mechanism of the precipitation of proteins by tannin is different from that with the other reagents. It is possible that the mechanism is similar to that of certain alcohols, for ethyl alcohol also produces a maximum of precipitation at the isoelectric point. This analogy was tested out by observing the precipitation of serum and gluten by different alcohols with respect to the isoelectric point.

It was found that the maximum of precipitation of serum and gluten by the different alcohols (resorcin, hydroquinone, phenol, propyl alcohol) occurs at about the isoelectric point, i. e., with mixtures of 1 to 2 to 1 to 4 parts of acetic acid and acetate, respectively. With the exception of propyl alcohol, the precipitation diminished in intensity on either side of this point. There appeared to be no difference in the precipitates produced by propyl alcohol. It is also to be noted that serum alone without the acid-acetate mixture gave slight precipitates with all alcohols except propyl alcohol. The data strongly indicated that the mechanism of precipitation by tannin more closely resembles the alcohols than the other alkaloidal reagents.

## 3. *Precipitation of Serum and Gluten in Acids.*

Thus far it is seen that the precipitation of serum and gluten by the various reagents occurs when acid protein is present. That is, it takes place in the presence of a concentration of hydrogen ions higher than the isoelectric point, and, apparently, is augmented when these are in excess. However, it still remains to be shown whether precipitation depends upon the liberation of the acid of the reagent, or the formation of protein salts with added acid and the reaction of these with the reagent.

According to Pauli, the dissociated hydrogen ions of such acids as acetic or hydrochloric are bound by protein with the formation of dissociated protein ions with positive electric charges. The number of these charges increases with the addi-

tion of more acid until all of the protein is saturated. This occurs even in the lowest concentrations of acid. Such bound hydrogen ions do not become available for other reactions unless the quantity of protein remains constant and an excess of acid is added. If, then, precipitation in a mixture of protein and acid by a reagent occurs only during the phase of excess acid and not when protein ions only are present, the conclusion must be drawn that precipitation depends upon the presence of free acid and not upon dissociated protein ions alone. That is, the precipitate is a combination of the free acid of the salt with the protein or acid protein.

The experiments were performed by adding small and constant quantities of serum and gluten to different concentrations of acetic and hydrochloric acids and noting where precipitation occurred by the further addition of constant quantities of different reagents.

It was found that in the lowest concentrations of both acids, where dissociated protein ions occur, no precipitation of serum and gluten with iodine potassium iodide, mercuric iodide, ferrocyanide, tungstate and phosphomolybdate took place. Precipitation occurred only with the higher concentrations, that is, in the presence of an excess of free acid, and depends upon the formation of insoluble compounds with the free acid of the salt. The beginning of the precipitation with the different reagents varied, and small but negligible variations were noted in the same reagent with different acids. In the higher concentrations, the tannin precipitates dissolved. This was also true of iodine and potassium iodide, which at no time gave absolutely distinct precipitates. This phenomenon perhaps depends upon the formation of soluble acid salts.

#### 4. *The Effect of Salts on the Precipitation.*

The addition of salt to an acid might conceivably alter the protein precipitation by alkaloidal reagents and alcohols. This was studied in the following manner: To constant and definite concentrations of gluten and serum in the same volume of acetic and hydrochloric acids of different concentrations were added constant volumes of potassium chloride and potassium sulfocyanide, and finally to this mixture constant and definite quantities of the reagents. Each series of experiments with the different salts was compared with a series without salt, that is, with distilled water as a blank.



The data showed that the two salts, chlorid and sulfocyanid, exerted practically no influence upon the formation of the precipitate by the various reagents used. The small variations which occurred fall within the experimental error. This was true of both serum and gluten.

With tannin, precipitation in the presence of the chlorid and sulfocyanid occurred in the lowest concentrations of the hydrochloric acid. Thus a small difference from the other reagents is indicated.

With alcohols, the addition of salts also had practically no influence upon the precipitation.

#### 5. *Effect of Concentration of the Protein.*

It is conceivable that the concentration of the protein might affect the precipitation. This was tested out by using two different concentrations of serum, 0.017 per cent and 1 per cent (as end concentrations of protein), in constant volumes of hydrochloric acid of different strengths and precipitated by the further addition of one drop of the reagent.

As the results with the different concentrations of serum were practically identical, it is to be concluded that wide differences in protein content have no marked influence on the precipitation.

The details of the experiments are published in the *Journal of Biological Chemistry*.

### Summary

The mechanism of the precipitation of horse-serum and gluten by tannin is different from that of certain precipitants commonly known as "alkaloidal reagents." With these a certain amount of free acid (hydrogen ion concentration) is necessary for the formation of the complex insoluble compounds.

Tannin behaves like certain alcohols, e. g., resorcin, phenol, hydroquinone and propyl alcohol, since the maximum of precipitation in both cases corresponds to the isoelectric point in serum albumin and gluten.

Precipitation of serum is uninfluenced by wide differences of concentration and the addition of such neutral salts as chlorid and sulfocyanid.

1. Michaelis, L.: *Biochem. Zeit.*, 1910, 24:79.
2. Pauli, W.: *Kolloid Zeit.*, 1913, 12:223.
3. Sörenson: *Ergeb. d. Physiol.*, 1912, 12:393.

# REPORTED CASES OF NOTIFIABLE COMMUNICABLE DISEASES IN OHIO, FOR THE MONTH OF JANUARY, 1915

	Cities	Villages and Townships	Totals
Chickenpox .....	773	1,064	1,837
Diphtheria .....	575	244	819
Measles .....	292	764	1,056
Mumps .....	267	779	1,046
Pneumonia .....	161	362	523
Scarlet Fever .....	444	639	1,083
Smallpox .....	131	198	329
Tuberculosis .....	371	159	530
Typhoid Fever .....	143	151	294
Whooping Cough .....	134	443	577
Gonorrhea .....	3	160	163
German Measles .....	4	87	91
Epidemic Cerebro-spinal Meningitis.....	10	5	15
Ophthalmia Neonatorum .....	71	6	77
Acute Anterior Poliomyelitis.....	2	2	4
Syphilis .....	3	21	24
Trachoma .....	9	9	18
Septic Sore Throat.....		1	1
Favus .....	1		1
Totals .....	3,394	5,094	8,488

## COMMUNICABLE DISEASES, JANUARY, 1915

This table records cases reported to the State Board of Health for the month of January, 1915.

Health District	Chickenpox	Diphtheria	Measles	Mumps	Pneumonia	Scarlet Fever	Smallpox	Tuberculosis	Typhoid Fever	Whooping Cough
Cleveland .....	204	212	27	21	128	74	10	105	17	39
Cincinnati .....	78	89	8	80		39	5	114	9	22
Columbus .....	65	25	1			21	1	16	2	6



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902.

Capital Stock, \$6,000

---

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH F. STONE  
2318 PROSPECT AVENUE

ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.  
ROGER G. PERKINS, M. D.

JOHN PHILLIPS, M. B.  
T. WINGATE TODD, F. R. C. S.

COLLABORATORS

H. E. HANDERSON, M. D.  
S. W. KELLY, M. D.  
J. J. R. MACLEOD, M. D.

DAVID MARINE, M. D.

TORALD SOLLMANN, M. D.

H. L. SANFORD, M. D.

G. N. STEWART, M. D.

---

EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.  
*Vice-President*, C. E. BRIGGS, M. D.

*Secretary*, C. A. HAMANN, M. D.  
*Treasurer*, H. G. SHERMAN, M. D.

---

BOARD OF DIRECTORS

C. E. BRIGGS, M. D.  
F. E. BUNTS, M. D.  
G. W. CRILE, M. D.

C. A. HAMANN, M. D.  
C. F. HOOVER, M. D.  
S. H. LARGE, M. D.  
J. B. MCGEE, M. D.

J. P. SAWYER, M. D.  
H. G. SHERMAN, M. D.  
W. H. WEIR, M. D.

---

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

---

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

---

## EDITORIAL

### THE REPORTING OF NOTIFIABLE DISEASES

The importance of reporting diseases to the Health Department is emphasized by the recent issue of notification blanks by the United States Public Health Service through the State Department of Health of Ohio. There is a marked tendency to allow the reporting of notifiable diseases to go by default, and as a result it is often extraordinarily difficult to find the degree

of severity or the amount of distribution of an epidemic. In many cases the apparent mortality based on the number of deaths in comparison with the number of reported cases gives the impression that a most unnecessarily high proportion of all cases die under the care of our physicians. The natural corollary would be that the method of treatment was not very satisfactory. It is, therefore, not only an interference with the functions of the Health Department, for the support of which we all pay in our annual tax assessment, but also a reproach to the skill of the local physician, when reporting is neglected. It is, of course, probable that in many cases this lack of reporting is due to carelessness and to the bother of getting out the information. These difficulties have been to a large extent removed by the issuance of these extremely convenient notification blanks. It is to be hoped that the profession will assist to the best of its ability in the present effort to obtain accurate knowledge as to the presence and distribution of reportable diseases.

R. G. P.

---

### HEALTH IMPROVEMENTS NEEDED IN OHIO\*

In an address before the Forty-first Conference of Ohio Boards of Health, held in Columbus, January 28-29, 1915, Doctor H. T. Sutton, President of the Ohio State Board of Health, gave the following outline of the needs in health improvements in Ohio:

"This conference is provided by State law in order that it may consider the cause and prevention of dangerous and communicable diseases and other measures to protect and improve the public health.

You, the local health officers of Ohio, are the men upon whom depends in a large measure the protection of the health of the State. We have a State Department of Health in charge of an able secretary and executive officer who has made a profound study of health administration, but in the end he must depend largely upon you for whatever success may be attained in State health work. You are really an important part of the Machine which has for its work the prevention of disease in the State. As the health of each of your communities depends upon the health of all the individuals, so the health of the State depends upon the health of the various cities and counties. You

---

\*Abstracted from the *Ohio Public Health Journal*.



are the men upon whom falls the responsibility of preventing disease in your respective cities and counties. The State Board cannot do your work. You are essentially a part of the State organization and must share in its successes or failures. You have responsibilities to your respective communities, but your responsibility to the State is just as great, for disease is no respecter of city or county boundaries, and the welfare of the State depends in a measure on health conditions in each of your cities and counties.

In order to prevent disease, the first thing to be done is to find out where it is and under what conditions it is occurring. This can only be done by having the physicians report the cases that they are called to attend. The satisfactory control of disease without the co-operation of all the practicing physicians is impossible. Every practicing physician is therefore a working part of our health department. They constitute the skirmish line of the health department, so to speak, giving information of the presence of the enemy, the appearance in the community of the diseases which it is the duty of the health department to control. The work of the health department has changed and grown much in the past twenty-five or thirty years, due to increased and more definite knowledge of the cause of diseases and the manner in which they are spread. Many States, together with Ohio, are now attempting to prevent what is known as industrial diseases, particularly the industrial poisonings such as lead poisoning. To do this it is necessary to have the cases reported, showing the conditions existing capable of producing the diseases, conditions that should be remedied.

In health administration morbidity reports are very essential—serve many purposes to protect the community at large; make it possible for the sick to receive proper treatment, as in ophthalmia neonatorum, diphtheria, et cetera. In pulmonary tuberculosis such reports show the number of cases and the need for sanatoria. In malaria they show the prevalence of the disease and the need of drainage, et cetera. In typhoid fever they show a faulty water supply or milk supply. The State has made it possible for you to require all the information necessary as to the status of all diseases within your jurisdiction. The duty of securing reports is left in your hands, so that you alone are to blame if cases are not reported.

The State of Ohio, through the Legislature and the State Board of Health, has made it a misdemeanor for a physician to fail to report to you every recognized case of certain designated diseases among his patients, and has fixed a penalty for such failure. The penalty, of course, is only intended for those who would not otherwise obey the law, and it is to be hoped there are few requiring its application. The physician who fails to report is neither true to his patients nor to the community; besides he is a criminal in the eyes of the law; he also violates the spirit of his ethical code and his citizenship. For the same reason that the physician should report cases to you, you should report to the State Department of Health. The State department should at all times have information of the prevalence of preventable diseases throughout the State; if you fail to give this information to the State Department you are as culpable as the physician who fails to report his cases, in fact, you are more to blame, because you should realize more fully the importance of such a report. Such reports make it possible for the State Department to notify you of the threatened epidemic, so that you can take steps necessary to protect your communities; in other words, it enables us to keep informed—it is important for you to know of the prevalence of disease in neighboring localities as well as your own. The State Department, as well as yourselves, is interested in knowing the prevalence of preventable disease in the adjoining States, and for this purpose the health authorities of the different States, in conference with the federal public health service, adopted a plan whereby they will report regularly to the federal public health service, and in this way we can keep posted in regard to the prevalence of preventable diseases in adjoining States. These reports are published in the public health reports and sent to all persons engaged in public health work who request it.

Health organization in Ohio is very inefficient and must of necessity remain so until we get some new legislation such as is proposed in the new district health bill which will be presented to the present General Assembly.

The bill will very materially reduce the number of health units and increase the size of them. It is a well established fact that the smaller the health unit the poorer the service and the larger the health unit the better the service. There are at present about 2,200 health divisions in the State of Ohio. If this bill becomes a law all departments of health in villages and town-



ships will be replaced with whole-time well trained health officials, the equal of the health officers of the larger cities. Under the district plan it is proposed to have the State Board of Health act in an executive capacity and the County Commissioners in an advisory capacity toward the district health officer. All physicians and all progressive citizens should use their influence to have this district bill passed before the present Legislature adjourns. This proposed district plan will, in my opinion, place public health work on a much higher plane of efficiency and is in every sense of the word along the lines of economy.

The proposed district plan was submitted recently to the Conference of State and Provincial Boards of Health of North America, held at Washington. It was a part of a report of a committee appointed to draft a model district and county health law. The report of the committee was unanimously adopted. The difficulty encountered in pushing through this very much needed legislation is the fact that the community as a whole does not appreciate the true value of public health work. It has been well stated that public health is purchasable, and it should be kept in mind that community prosperity is impossible without community health.

A bill providing for the transfer of the Bureau of Vital Statistics from the Department of State to the State Department of Health is to be presented to this session of the Legislature; it likewise should have the support of all physicians, health officers and progressive citizens. At present there are only four States in the union where the Bureau of Vital Statistics is separate from the State Board of Health, viz.: Michigan, Massachusetts, North Dakota and Ohio. Vital statistics should be made of current value. They are of great importance in the control of communicable diseases. The present bureau of Ohio costs the State about \$30,000 a year and furnishes the State Department of Health with no current information. This bureau is engaged almost entirely in the compilation of annual reports. By combining this bureau with the State Department of Health, statistics gathered may be made of current value and the cost of operating the bureau reduced at least one-half. This combination is strongly urged by the chief of the United States Bureau of Vital Statistics, United States Census and other leading authorities.

The field of usefulness of the Ohio State Sanatorium at Mt. Vernon should be extended. This institution cost the State ap-

proximately \$750,000.00 and has a capacity for only 145 persons. Inasmuch as there are at least 35,000 cases of the disease in Ohio today and between 6,500 and 7,000 people dying annually from this disease in Ohio, and the disease is known to be absolutely preventable, it would seem that the State should take drastic steps to bring about an effective control of it. The State Department of Health maintains a division which is conducting a general educational campaign in regard to this disease, and is attempting to stimulate and encourage the building of local district hospitals. There are present four districts, three county and two municipal hospitals in Ohio. The present law requires the payment of \$5.00 and does not provide for the treatment of those unable to pay this fee. The payment of fees for treatment in the institution should be placed in the hands of the State Board of Charities, the same as all other State institutions. The inability to pay should not prohibit the treatment of any case of tuberculosis in this institution, as is now the case. The State Department of Health should establish a bureau for the admission and discharge to all tuberculous hospitals in the State. This bureau would investigate the homes of all prospective patients and also the homes to which discharged patients propose to go, in order to insure absolute sanitary conditions, so that the disease will not again occur. There is now no provision for following up cases or investigating cases before admission to the hospitals. The capacity of this State institution should be extended to at least two hundred, and this could be easily done by the building of inexpensive shacks on the hospital grounds.

Another much needed improvement is the establishment of a diphtheric antitoxin bureau or division in the State Department of Health, to make and furnish free diphtheria antitoxin to all State institutions and to all the indigents of the State. The present list prices of antitoxin of the commercial firms furnishing this product are exorbitant; over \$100,000 are spent annually by the State institutions and the local departments of health for antitoxin. If the product could be produced at cost it is estimated that not over \$10,000 would be spent in the State annually. The cost of taking up this work would be comparatively small to the State Department of Health. At the present time we have a fairly well equipped laboratory, and by co-operation with the State Veterinary Department of Medicine of the State University the cost would be materially reduced, as this department has now



ample stable space for the horses which are used in making the antitoxin. The Department of Health of Massachusetts and several other States are now making antitoxin for free distribution. I might mention the fact that the State is now providing and making hog cholera serum, and it would seem that the State should at least give equal consideration to the children who are so unfortunate as to contract diphtheria.

Still another splendid opportunity is offered for this State to practice economy and increase efficiency, by transferring the laboratory work of the food and dairy division of the State Agricultural Department to the laboratories division of the Department of Health. At the present time the analytic work on food and dairies is being done by commercial chemists at a cost of from \$2.00 to \$8.00 per sample. About \$15,000 per year is being spent for this work. The State maintains a fully-equipped laboratory in connection with the State Department of Health. The dairy and food work is plainly public health work. Accurate estimates show that the laboratory of the State Department of Health can do all this work and also the work of the Ohio Board of Administration at a cost not to exceed \$1.50 per sample. The average cost now paid by the Dairy and Food Department of the Agricultural Commission is \$5.00 per sample. The economy to be effected by such an arrangement as above described is very evident. It is not desirable to transfer the police work of this division to the Department of Health, but it is certainly desirable to transfer the laboratory work. The results of the analysis would be furnished by the laboratory of the State Department of Health to the dairy and food division of the Agricultural Department.

We are sadly in need of some new legislation looking to the better care of the health of the school children. Only five States in this country require physical examination of school children. In others it is optional. If the State has a right to say that parents must send their children to school, the State should see to it that the children are not needlessly exposed to disease or any other condition dangerous to health. The problem of looking after the health of school children is indeed a large one. The mere prevention of communicable disease is not sufficient, but the pupils should have good air, proper lighting and seating facilities, good water supply and sanitary toilet arrangements, et cetera. Teachers should be required to know considerable about sanita-

tion, they should be able to teach the children the fundamentals of hygiene which are of such great importance to the community, namely, pure air, good food, proper exercise, cleanliness of person and surroundings, et cetera. There are approximately 20,000,000 pupils in the public schools of this country. A careful examination of the statistics shows the following facts in regard to these pupils: 15,000,000 are known to be physically defective in one way or another. These defects are approximately distributed as follows: 5,000,000 defective vision, 1,000,000 defective hearing, 5,000,000 malnutrition, 1,000,000 spinal curvature, flat foot, et cetera., 1,000,000 tuberculosis, 400,000 organic heart disease, 1,000,000 enlarged tonsils, adenoids or glands. In addition to the above mentioned defects 10 to 12 millions have defective teeth. With the above mentioned facts in mind, the necessity for the medical inspection of school children is established. It is the duty of every health officer to advocate the medical inspection of schools in order that these defective children may have the benefit of early medical attention before it is too late.

When the lawmakers come to fully realize that it is worth much more to be kept well than it is to be cured, and that a well-organized and well-equipped health department, with plenty of means and power, could put the most of us physicians out of business, then there will be something doing.

A more effective propaganda against tuberculosis is the greatest need of the hour. It is not likely that any great things will be accomplished in the control of tuberculosis until the State and National governments do as they did in the fight against the foot and mouth disease among the cattle, "Take the bull by the horns" and throttle him at any cost.

In this connection it is interesting to note the seriousness with which the State and National Governments viewed the foot and mouth disease among its cattle when it became a plague of no small dimensions. Fourteen States were quarantined and many herds of cattle slaughtered. Three hundred government inspectors (the most learned scientists in the Agricultural Department) were rushed to the scene of the disaster to co-operate with State officials in quelling the outbreak. Every possible precaution and preventative measure was promptly resorted to, to eradicate the infection. The most rigid regulations with heavy



finances for violations were imposed upon railways and shipping points. Nothing was left undone by the inspectors to check the spread of the baffling disease, even children of farmers whose cattle were infected were kept from school, and the national government shared equally with the states in bearing the expense of condemnation, isolation and disinfection. Their actions were timely and wise and command the highest commendation. Congress made an emergency appropriation of several millions of dollars to stamp out the dread plague. But what is the national government doing to check the ravages of the great white plague in the human family, which takes annually about 200,000 lives in our own country? They apparently show no concern whatever about the horrors of this, the greatest of all plagues on earth, but a few dead cattle created great excitement in the Congress of the United States.

Tuberculosis as well as most other diseases of the world could be banished from the earth if our medical knowledge could be backed up with proper authority and the co-operation of the laity. Conservative estimates show that about 70 per cent of deaths are due to contagion. The almost total obliteration of typhoid in the army is a good illustration of what can be accomplished along the lines of preventive medicine, only 3 cases in 1913. Not a single case occurred in the inoculated. Notwithstanding the great number of troops scattered along the Mexican border in large camps. This means that typhoid fever as a military disease is a thing of the past. The same results could be accomplished throughout the country with a sufficient number of properly trained leaders in the public health field. How long would it take to drive diphtheria to the wall if antitoxin was used in every instance known to be indicated by an up-to-date health official? It would mean the saving of about 1,000 lives each year in the state of Ohio alone. In the face of the last statement which is a fact, a former Ohio Legislature turned down a bill which provided that the state make their own antitoxin and furnish it free to the indigent people of the state. The same body voted readily to appropriate \$94,000 for an institute to study hog cholera and make serum for the same. 'I fail to see where the hog has any right to squeal.' "

## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. McGEE, M. D., Cleveland

**Sciatica:** In the *Medical Record* for February 6, W. M. Leszynsky considers the treatment of sciatica by perineural infiltration with physiological saline solution. He had previously reported twenty-five cases of sciatica treated by this method, and has since used this procedure in one hundred and thirty-five additional cases. The number of injections required for the individual cases varied from one to six, but averaged three injections for each patient. Complications or unpleasant symptoms have never been encountered. Under proper technique and strict asepsis, it is a harmless operation. As a result of this larger experience, he reiterates his statement of three years ago, that "perineural infiltration of normal saline solution at the sciatic nerve, when properly performed, proves a valuable acquisition in relieving the pain of sciatica, whether acute or chronic." From one to six injections are required to secure permanent relief. In numerous instances one or two injections have sufficed. In ordinary cases, patients recover from sciatica under the customary therapeutic procedures. In subacute and chronic intractable cases, however, it has proved, in his experience, the most satisfactory addition to our therapeutic armamentarium that has yet been devised. Constitutional treatment must not be neglected, and after relief is obtained from the injections it is often necessary to utilize supplementary measures in order to prevent a recurrence. The procedure consists in the injection of a large quantity of fluid under pressure directly over the sciatic nerve. Lange claimed that the favorable results obtained was entirely due to the mechanical action of the fluid in loosening, stretching, or breaking up adhesions in the neighborhood of the nerve. But, as Leszynsky has repeatedly produced prompt and permanent relief from pain in acute or very recent cases, he believes that such favorable results must have been due either to blocking of sensory conductivity or to the pressure and absorption of the fluid producing changes in the circulation and nutrition of the perineural structures. In acute cases it would be too early to assume the presence of adhesions. Lange originally used a solution of betaeucaine, but Leszynsky has found it unnecessary, as the saline solution proves adequate, and in every way satisfactory. He details the technique, the amount of saline solution varying from 80 to 120 c.c. The injection in this quantity is attended with comparatively slight pain. The object is to produce infiltration of the nerve and surrounding structures, and it is not intended that the nerve sheath should be entered by the needle. In the one hundred and sixty cases herein reported, there was no evidence of joint or pelvic involvement, and the correctness of the diagnosis was beyond doubt. The fact that many of these patients were rapidly and permanently cured by a single injection in the neighborhood of the painful sciatic nerve, is ample evidence of the affection being limited to that circumscribed area. After a large experience with all of the available and conventional remedies, the method herein described has proved in his hands the most valuable therapeutic acquisition developed within recent years.

---

**Typhoid Vaccine:** E. B. Krumhar and Russell Richardson, in the *American Journal of the Medical Sciences* for March, writes concerning the value of typhoid vaccines in the treatment of typhoid fever. Following such phenomenal success in the prophylactic use of typhoid vaccines, it is but natural, with a logical theoretical basis, that they should also be tried for the cure of typhoid fever. The large number of typhoid cases admitted annually to the Pennsylvania Hospital have been utilized by them as a favorable basis for an investigation of the value of such a procedure. While the benefit is, of course, less striking than that following its prophylactic use, they report distinctly



favorable results from three years' observation on cases at the Pennsylvania Hospital. In the later cases, whether from the larger doses used or the more experience acquired, the results have been so much more favorable that they feel justified in recommending the proper use of typhoid vaccines as a specific and valuable form of treatment of this very important disease. Their conclusions are: (1) The curative use of typhoid vaccines in the course of typhoid fever in order to stimulate further antibody formation, has a logical theoretical basis, although its mode of action has not as yet been demonstrated experimentally. Practical proof of its value is afforded by the rise in agglutinin curves after such vaccination. (2) The proper use of vaccines in the treatment of typhoid fever has been found clinically to be without harm, and usually to produce beneficial results. It rarely causes any noticeable aggravation of symptoms, beyond a fleeting rise of temperature. Relapse and complications are diminished in frequency, but not prevented. The increase in size of the spleen, noted by others, has not been observed by them. (3) The best results are obtained, if the injections are begun early in the disease, especially before the tenth day. A blood culture is more valuable than the Widal in the early stages. Late in the course of the disease, except in selected cases, the value of vaccines (both theoretically and practically) is more dubious. In the chronic complications of typhoid, such as periostitis and cholecystitis, good results have been obtained from vaccines by other investigators. (4) The contra-indications for vaccine treatment of typhoid are not yet clear. They would hesitate to advocate their use in moribund, or very toxic cases, during hemorrhage or suspected perforations, or in such complications as pneumonia, or otitis where other micro-organisms are involved. (5) The best dosage has also not been determined. Semple, Petrowitch, and Walters and Eaton have had good results with small doses; MacArthur, Fletcher and Meakins and Foster equally good results with much larger doses. While this would indicate to some that the true benefit from vaccines was dubious, they feel that the discordance is due to differences of patients and epidemics, preparation of vaccine and "personal factors." The dosage must vary within certain limits for each patient, and no cut-and-dried rule should be attempted. The more severe the disease, the smaller and more cautious should be the dosage. They felt that the best initial dose for average adult was 500,000,000; if this proved to be the proper amount, two or more larger doses were given, usually at three-day intervals.

---

**Dysmenorrhea:** In the *Journal A. M. A.* for February 27, B. L. Spitzig treats of the use of citric salts in congestive dysmenorrhea. He believes that most non-organic types of painful menstruation, frequently complicated by sterility, may be ascribed to the one essential—congestion. Furthermore, organic conditions, as minor malpositions, and moderate atresia, may be largely dependent on the same fundamental factor. There are three chief factors concerned in the production of functional dysmenorrhea: First, a morbid condition of the endometrium. Secondly, the consequent interference with uterine contraction and obstruction to its discharge, which becomes aggravated by uterine and cervical spasm. Lastly, the nervous element. No disorder illustrates the personal equation better than menstrual pain. Every case is individual, and there seems to be an excellent opportunity here to utilize measures toward strengthening the psychic element. In regard to the treatment, nitrogenous food raises the viscosity of the blood, and accordingly is restricted before the menses. Catharsis depletes the portal circulation, and at times a hot compress is applied for the purpose of relaxation. The important procedure is the reduction of viscosity through the use of sodium citrate, 20 grains, three times daily, during the week or two preceding the expected period. The mode of action is peculiar to the

citrates. Diuresis does not explain the results. The clinical evidence in support of the efficacy of this treatment is the improvement of pain, and the reduction of clots and membranes in the menstrual discharge. Further, nausea, dizziness, headache, and mental irritability are vastly improved. In other instances dysmenorrhea attends the hypoplastic state, with persistent thymus and frequently the incomplete forms of hypothyroidism. From personal observation, thyroid extract appears to regulate the menses in certain secretory anomalies, and to reduce the intermenstrual leucorrhea. This applies particularly to chlorotics, for whom pituitary extract proves a valuable adjuvant to the thyroid medication.

---

**The Teeth:** The *Therapeutic Gazette* for February comments on the jaws, the teeth, and the general practitioner. The time has not long passed when the general practitioner had no interest in the condition of the jaws and teeth of his patient, save that occasionally he was called upon to remove with forceps a troublesome molar. With the advance in our knowledge concerning the causes of many diseases, and with our constantly increasing information as to the means by which bacteria find their way into the tissues of the body, we are now on the lookout for septic foci, and in a very large proportion of cases find them about the teeth in the form of a pyorrhea alveolaris, and sometimes in the tonsils. From these two centers of infection, micro-organisms gain access to the circulation or to the lymph channels, and being carried to other parts of the body, induce arthritis, infections of the kidney and bladder, of the endocardium, and sometimes of the pleura. Recently several cases have been seen in which the presence of pus about the roots of the teeth has resulted in serious and prolonged illness, with all the manifestations of septicaemia. It is of vital importance, therefore, that in investigating an obscure case of fever and arthritis, the condition of the oral cavity be carefully looked into, that the dental surgeon shall be called in consultation to discover and remove the foci of infection, and that the expert with the X-rays shall also be asked to aid in the discovery of a possible cause of illness, since it not infrequently happens that by this means a septic focus at the root of a tooth is discovered. Under these circumstances, the tooth should be removed, or its surrounding tissues so treated that, with the aid of antiseptic applications, free drainage may be obtained. It not infrequently happens that septic "foci" about the teeth produce no general or local symptoms until by some illness or other cause the patient's vital resistance becomes impaired, and then the micro-organisms are able to induce severe illness.

---

**Emetine:** Carl Nielson, in the *American Journal of Clinical Medicine*, treats of the physiologic action of emetine hydrochloride. It seems to be a clinical fact that emetine stops hemorrhage, but very few investigators have attempted to explain the hemostatic properties of the alkaloid. Maurel comes to the conclusion that the use of emetine is to be preferred to that of ipecac in all cases where the latter has been employed—with one exception, namely, as an emetic. It is a well-known fact that emetine is much less emetic than is ipecac, and that the emesis induced by the latter is mainly brought on by cephaeline, the second alkaloid of the root. His conclusions are: (1) The hemostatic action of emetine hydrochloride, in therapeutic doses, is a consequence of its vasoconstrictive properties, confined to the capillary circulatory system, in conjunction with a decrease of the rate of the heart beat, produced at the same time. (2) Apparently, it does not influence either the physical composition or the coagulability of the blood. (3) In toxic doses it causes increased salivation, nausea, vomiting, slowing of pulse, decrease of temperature, and muscular weakness. (4) In lethal doses, it produces central paralysis, and arrests the heart in diastole. (5) The vomiting produced by toxic doses is due to local irritation of the gastric mucous



membrane. (6) The results obtained with frequent and non-frequent uteri from guinea-pigs seem to indicate that the action of emetine hydrochloride on this organ is not of therapeutic importance.

---

**Condensed Milk:** In the *New York Medical Journal* for February 20, Louis Fisher, writing on the value of condensed milk as a substitute for the mother's milk, states that: The two elements in food most necessary for the physiological growth of the infant are fat and protein. Both of these elements are sadly lacking in condensed milk. In fact, the dilution of condensed milk with water, as ordinarily used, gives no more than one-half to one-third of the protein required for structural development. Approximately the same percentage of deficiency applies to the fat content of condensed milk. If one teaspoonful of condensed milk is added to fourteen parts of water, we have but 0.7 per cent of protein, 0.6 per cent of fat, and 3.5 per cent of sugar. Presuming that instead of one teaspoonful of condensed milk we double the quantity, so that two teaspoonfuls are added to about fourteen parts of water, then our formula would be, fat 1.2, sugar 7.5, protein 1.4. We cannot compare the foods from the nutritional standpoint, because where we are dealing with human milk we supply a normal quantity of fat and protein, and a high percentage of sugar. In condensed milk we have a high sugar percentage, and a deficient percentage of fat and protein. No argument can place condensed milk in the same category as human milk, because human milk is a *live fluid*, derived from the human body, and *contains live factors*. It can compare in strength and nutrition, therefore, only with blood and lymph or another vital secretion. Deficiency of fat, as found in condensed milk, is usually manifested by a series of symptoms, one of the earliest of which is constipation; later there are head sweating and restlessness at night, to such an extent that the rolling of the head causes baldness of the occiput. After what has been said of the baneful effects of condensed milk feeding, the question naturally arises, Shall this form of feeding be used at all? His answer is: As the protein content, and also the fat content are exceeding low, while the sugar is very high, such food may be used only as a *temporary expedient* and *as a substitute* for a short time. It is indicated in stomach abuse if very high fats or cream feedings have deranged the gastric function so that fat tolerance is limited. In acute febrile processes we are sometimes at our wit's ends to know what form of feeding to give. It is here that condensed milk will find its place, but he repeats that the feeding must not be extended over a long period, because of the danger to the human body. The palatability of this food renders it very agreeable to infants, and this is sometimes looked upon as an argument in favor of continuing it. Lastly, the food should be condemned because of the tendency to weight increase, which latter results from the excessive quantity of sugar. We must, therefore, not be misled to believe that weight increase is always physiological, because overfed babies need not necessarily be healthy babies. A gradual, steady gain in weight of four ounces a week on a low fat of 2.5 per cent, with a protein content of two per cent, with five or six per cent of sugar, will serve the purpose of nutrition and metabolism far better than the feeding of an excessive quantity of carbohydrate in the form of sugar or starch with a low fat and low protein, as found in condensed milk, even though the latter feeding gives a larger increase in weight. He has known infants to gain from ten to twelve ounces a week on condensed milk, but the structure literally fell to pieces after several months of such feeding.

---

**Typhoid Fever:** In the January number of the *Critic and Guide*, Solomon Solis Cohen presents his views on the use of water and alkaline-saline solutions internally in the treatment of typhoid fever. In typhoid fever, as a type of acute infections, free elimination

is of great importance. In view of the intestinal ulceration, it is most frequently inadvisable to administer purgatives after the first cleansing mercurial, and the saline aperient following. But he advises—at least until the tenth or twelfth day, and often throughout the case—the use of hot saline solution (sodium chloride, 1 dram to the pint of water at a temperature of 104° F.), thrown into the colon daily as a cleansing irrigation. All this, however, simply serves to keep the colon clean; it does not materially increase eliminative activity. To stimulate the kidneys, the best agent is water, but experience proves that when the water is made slightly saline the large quantities necessary are more readily taken. Alkalinity of the blood helps resistance to infection in general. He has adopted for convenience the plan of prescribing a number of powders, each of which contains: Sodium chloride, 10 grains (0.6 gm.); sodium phosphate, 5 grains (0.3 gm.); sodium bicarbonate, 20 grains (1.3 gm.). One powder is dissolved in a tumblerful of water. This should be given in alternation with the same quantity of plain water, at least every second hour, or, if possible, hourly, the attempt being made to give at least 1,000 c.c. each of water and of alkaline-saline beverage during the working hours of each day (24 hours). In a certain proportion of cases, however—meaning again an uncertain proportion—the patients will refuse the alkaline-saline beverage in any strength or proportion. In such cases, sodium or potassium citrate or sodium or potassium bicarbonate may be administered medicinally, if necessary. When a sufficient quantity of water or of the alkaline-saline beverage cannot be given to produce the desired result, hypodermoclysis or interoclysis must be resorted to.

---

**Aid For Belgian Physicians.**—"It would be merely repeating what everyone knows to state that conditions in Belgium are terrible beyond description, and that human beings are literally starving. Various methods have been adopted to improve the conditions, but most of them have been more or less general. In addition, there have been developed methods for relief by groups, among which is that conducted by the Committee of American Physicians for the Aid of the Belgian Profession. Specifically, the object of this committee is to relieve only members of the medical profession in Belgium. The contributions that have been received by the committee have been reported in our news columns week by week. It will be noticed that these contributions usually run above \$5, although once in a while someone sends in \$1. And yet there are thousands of physicians who are not able to give \$5, but who would gladly contribute a smaller amount. We want to emphasize at this time what was suggested incidentally last week—that officers of medical societies could render great help to the committee by giving the members an opportunity to make contributions—small or large, as the case might be—and let the total amount be credited to the society. This is one way of showing the efficacy of organization. The presentation of this humanitarian work to the members would, most assuredly, be aiding a good cause. It would permit the collection of small amounts, which though slight in themselves, would aggregate an effective sum. As will be noticed, last week there were four societies which contributed, and this week there are three more. If the number of small contributions can be increased, the most complete results will be achieved."

Contributions should be sent to the treasurer, Doctor F. F. Simpson, Jenkins Arcade Bldg., Pittsburgh, Pa.



## NEW AND NONOFFICIAL REMEDIES

During February the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official remedies:

H. K. Mulford Co.:

Cholera Serobacterin.

Meningo Serobacterin.

Typho Serobacterin, Mixed.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with New and Nonofficial Remedies.

Alcresta Ipecac Tablets.—Tablets containing an adsorption product of ipecac alkaloids and Fuller's earth, each tablet representing 10 grs. of ipecac. The ipecac adsorption product is said to pass the stomach unchanged but to be decomposed in the intestine with liberation of the ipecac alkaloids and thus to exert ambacidal action of ipecac in the body. Eli Lilly & Co., Indianapolis, Ind. (*Jour. A. M. A.*, Feb. 13, 1915, p. 591).

Typhoid Combined Vaccine (Prophylactic).—Marketed in vials and syringes, each package containing three doses. Schieffelin & Co., New York. (*Jour. A. M. A.*, Feb. 20, 1915, p. 665).

Cantharidin, Merck.—A non-proprietary preparation of cantharidin. Merck & Co., New York (*Jour. A. M. A.*, Feb. 20, 1915, p. 665).

## PROPAGANDA FOR REFORM

Celerina, Aletris Cordial and Kennedy's Pinus, Canadensis, Light and Dark.—As glaring instances of nostrums exploited to physicians on unscientific claims and false representations, the Council on Pharmacy and Chemistry has prepared reports on the products of the Rio Chemical Co., namely, Celerina, Aletris Cordial, Kennedy's Pinus Canadensis, Light or Abican and Kennedy's Pinus Canadensis, Dark or Darpin.

In addition to 42 per cent. of alcohol, Celerina is stated to contain kola, viburnum, celery, cypridium, xanthoxylum and aromatics. There is no ingredient in Celerina, except the alcohol, that has any recognizable activity, and the alcohol content is nearly as great as that of whiskey. The sooner it is realized that this preparation is essentially nothing but alcohol and bitters exploited under a fancy name, the better for the science of medicine and the public health.

In addition to 28 per cent of alcohol, Aletris Cordial is stated to contain aletris, helonias and scrophularia. These drugs have been discarded as valueless by modern scientific medicine. In Aletris Cordial there is no ingredient capable of producing any other effect than the alcohol stimulation and such psychic effect as may be due to the bitter taste. Yet physicians are asked to believe that "Probably no remedy is so uniformly successful in the prevention of threatened miscarriage as ALETRIS CORDIAL, Rio." Alcohol being the essential constituent of Aletris Cordial and the amount being high enough to promote the formation of the alcohol habit, the recommendation to administer it during pregnancy and to young girls is dangerous and an outrage.

Kennedy's Pinus Canadensis, Dark, recently renamed "Darpin," and Kennedy's Pinus Canadensis, Light, recently renamed "Abican," are of interest chiefly because of the unwarranted claims which are made for them. The "dark" preparation appears to be some sort of a tannin-bearing extract. The "light" preparation appears to be a sulphate of zinc-alum injection. It is devoid of tannin and is not an extract of pinus canadensis, as claimed. A discussion of the claims for these preparations is superfluous. It is enough to mention that they are recommended in such diseases as albuminuria, fetid perspiration, gonorrhea, uterine hemorrhage and leucorrhea (*Jour. A. M. A.*, Feb. 13, 1915, p. 606).

Tri-Iodides, Three Chlorides and Maizo-Lithium.—As an illustration of unreliability of claims and unscientific character of proprietary mixtures, the Council on Pharmacy and Chemistry published reports on Tri-Iodides, Three Chlorides and Maizo-Lithium, products of the Henry Pharmacal Company (J. F. Ballard, proprietor).

The A. M. A. Chemical Laboratory reported to the Council that contradictory and false claims were made in regard to the composition of Tri-Iodides (Henry). The Council held that Tri-Iodides conflicted with its rules in that the composition was incorrectly stated, because it was advertised indirectly to the public, because unwarranted therapeutic claims were made for it, because the name did not indicate the potent ingredients and because the mixture was unscientific.

Three Chlorides was claimed to contain mercuric chloride, arsenic chloride and ferrous chloride (protochloride of iron). The A. M. A. Chemical Laboratory reported to the Council that, while the advertising matter laid much stress on the superiority of the protochloride of iron which was stated to be present, the iron was not in the ferrous, but in the ferric condition. The Council held Three Chlorides in conflict with its rules in that its composition was not correctly stated, in that it was advertised indirectly to the public for the treatment of diseases with the likelihood of doing harm, in that exaggerated and unwarranted therapeutic claims were made for the preparation in that the name of this mixture did not indicate the presence of its potent constituents: iron, mercury and arsenic, and in that the routine administration of mercury and arsenic with iron in fixed combination is irrational.

Maizo-Lithium is one of the many proprietary lithium preparations based on the disproved theory that lithium dissolves uric acid deposits in the body. While claimed to contain "maizenate of lithium," the Association's chemists reported to the Council that they questioned the existence of such a compound, that the manufacturer had failed to submit evidence of its presence in his preparation, and that chemical analysis indicated the presence of lithium citrate, instead. The Council held Maizo-Lithium in conflict with its rules in that its composition was not disclosed, in that it was advertised indirectly to the public, and in that unwarranted therapeutic claims were made for it (*Jour. A. M. A.*, Feb. 5, 1915, p. 528).

Purity of Ether and Postanesthetic Glycosuria.—Animal experiments by Ross and Hawk showed that postanesthetic glycosuria is not due to impurities, as has been claimed, but is brought about by a carbohydrate free diet prior to the anesthesia. Those who claim that the U. S. P. tests for the purity of ether are insufficient, should present better evidence than they have so far done (*Jour. A. M. A.*, Feb. 20, 1915, p. 668).

Cod Liver Oil versus Milk, Butter and Eggs.—Like other fats, cod liver oil is readily digested and utilized in the body. Its disagreeable taste has largely outweighed its availability as a nutrient. Recent experiments have established that the peculiar growth-promoting qualities of cod liver oil are likewise possessed by butter and egg-yolk fat. There seems to be no reason, therefore, to administer the unpalatable cod liver oil (*Jour. A. M. A.*, Feb. 20, 1915, p. 667).

Cod Liver Oil Cordials.—To determine if the growth-promoting principle of cod liver oil is contained in the oilless cod liver oil preparations on the market, feeding experiments have been made with some of these preparations by J. P. Street, of the Connecticut Experiment Station. In these experiments it was found that the normal nutrition and growth of rats was not maintained when the fat of a standard ration was replaced by a representative amount of Hagee's Cordial of the Extract of Cod Liver Oil Compound, Vinol, Wampole's Perfected and Tasteless Preparation of an Extract of Cod Liver and Waterbury's Compound, Plain. When, then, these animals were placed on a ration containing an equivalent amount of cod liver oil, normal nutrition and growth was soon established (*Jour. A. M. A.*, Feb. 20, 1915, p. 638).



**Towns' Epilepsy Treatment.**—This is a bromid mixture marketed by the Towns' Remedy Company, Milwaukee, Wis. It was found by the A. M. A. Chemical Laboratory to contain the equivalent of 21.3 grs. of potassium bromid and 0.78 gr. of potassium iodid per dose (one and one-half teaspoonful) (*Jour. A. M. A.*, Feb. 20, 1915, p. 683).

**Virol.**—The Council on Pharmacy and Chemistry voted to refuse recognition to Virol (sold by the Etna Chemical Co. in the United States) because the claims made for it were unsubstantiated and unwarranted. A referee who analyzed Virol concluded that it was an extract of malt, with fat and a small amount of protein. He held that Virol could not be considered a "complete food," as claimed, nor an ideal food for infants (*Jour. A. M. A.*, Feb. 20, 1915, p. 683).

**Salesthyl and Sal-Hyl.**—Salesthyl, a liquid marketed in capsules, is stated to be the menthyl ester of methyl salicylated. Sal-Hyl is stated to be an ointment of Salesthyl, but the exact composition is not disclosed. Salesthyl was submitted to the Council on Pharmacy and Chemistry with the claim that it had the properties of salicylates, but to be more efficient. The evidence to substantiate the therapeutic claims was found to be inconclusive and untrustworthy. Being similar to "sal-ethyl," described in N. N. R., the name Salesthyl was held objectionable. The Council refused recognition to these preparations (*Jour. A. M. A.*, Feb. 20, 1915, p. 684).

**Analutos.**—Analutos is a name applied to calcium acetylsalicylate. The Council on Pharmacy and Chemistry refused recognition to Analutos because it was held not to have any advantages over acetylsalicylic acid. In view of this, it was held that medicine should not be burdened with this non-descriptive name (*Jour. A. M. A.*, Feb. 20, 1915, p. 684).

**Budwell's Emulsion.**—Budwell's Emulsion No. 1 is stated to contain cod liver oil, "Iodide of Arsenic," "Iodide of Calcium" and "Iodide of Manganese." Budwell's Emulsion No. 2 is claimed to contain the ingredients of the first and also creosote carbonate and guaiacol. The Council on Pharmacy and Chemistry refused recognition to these preparations because the exploitation made likely their use as "consumption cures," and because they are irrational shot-gun mixtures (*Jour. A. M. A.*, Feb. 20, 1915, p. 684).

**Citarin.**—Citarin was admitted to New and Nonofficial Remedies in 1906. The Council on Pharmacy and Chemistry held that experience had failed to demonstrate the value of Citarin as a uric solvent and hence directed the omission of it from New and Nonofficial Remedies (*Jour. A. M. A.*, Feb. 20, 1915, p. 685).

**Analgesia and Childbirth.**—J. C. Webster, Chicago, reports his experience during the last ten years with nitrous oxid gas in obstetric complications, and during the past year, it has been employed regularly by the staff of the Presbyterian Hospital to abolish pain in the second stage of labor. The technic is very simple. The administration is begun as a rule when the second stage pains are felt by the patient, though sometimes in the latter part of the first stage. A small nasal inhaler is used, the mouth of the patient being uncovered, and the gas bag is kept under low pressure. The patient is instructed to breathe quietly with closed mouth. This usually suffices to produce analgesia, and does not interfere with the expulsive efforts in the progress of labor. As soon as the uterine contraction begins to subside, the inhaler is removed, and the patient becomes again conscious. The nurse or assistant may be instructed to administer the gas satisfactorily, and it may be continued for hours if necessary. The amount of gas used varies, and the cost accordingly. The method is recommended as the safest and simplest method for painless labor, and its advantages over the much advertised "twilight sleep" are detailed. It can be used at home as well as in a hospital, and requires no special arrangements such as are called for in the scopolamin-morphin method.—*J. A. M. A.*

## The Academy of Medicine of Cleveland

### ACADEMY MEETING

The one hundred and seventeenth regular meeting of the Academy was held Friday, February 19, 1915, at the Cleveland Medical Library, the President, C. F. Hoover, in the chair.

Prior to the presentation of the regular program, M. E. Blahd showed a specimen of a gangrenous bowel, removed on account of obstruction.

The patient in this case was a man aged 58, who had suffered from chronic constipation. When first seen by the speaker he had not had a bowel movement for four days. He had taken large doses of cathartics, but without relief. He showed, when first seen, no abdominal tenderness, only slightly distended and was not suffering from vomiting. His pulse was 76, and his temperature a trifle over 98 degrees. There were no other symptoms.

The patient was given hot baths and enemata and turpentine stupes were applied, but without relief. He was operated the following day. Upon cutting through the peritoneum, the abdominal cavity was found to contain hemorrhagic fluid. The gut was found to be tightly twisted on itself and gangrenous. After futile attempts at resuscitation of the gangrenous gut, the descending colon, splenic flexure and one-half of the transverse colon were resected. The patient died twenty hours after the operation. The case is striking in that it shows how much gangrene of the bowel can be present without apparent symptoms.

R. E. Skeel, in opening the discussion, called attention to the use of cathartics in the case. He declared that the increased peristalsis caused by cathartics in such cases was largely responsible for the resultant gangrene. He said that the warning not to use cathartics in such cases was the lesson which the case taught.

The regular program follows:

1. **The Persistence of Active Lesions of Syphilis and Spirochaetes in Hearts of Clinically Cured Cases of Syphilis**, by A. S. Warthin, Professor of Pathology, University of Michigan.

There has always been an antagonism between the clinician and the pathologist, in their respective attitude toward disease. Naturally, the clinician, coming daily into contact with his patients, must be optimistic. But, the pathologist, who sees by post-mortem examination of the body tissues the failure of the therapeutic methods employed by the clinician must naturally tend to become pessimistic.

The above is especially true of the infectious diseases. In our investigations into the various infections we have merely scratched the surface, so to speak. The question of the infections and their efficient treatment embodies more than a knowledge of bacillus and coccus. For example, the present attitude is, that the cure employed for malaria is only a temporary one, leading to a temporary amelioration of the symptoms. The same is true of the treatment of tuberculosis. The same may be said of the treatment of the various treponemic diseases. Especially has this view been found to be more and more correct in the case of the venereal diseases. The general practitioner seems certain that gonorrhea and syphilis are curable diseases. The dissenting and pessimistic pathologist is called a crank.

When the speaker, twenty-five years ago, first called attention to the persistence of the gonococcus, after infection, his views were generally scouted. Now the profession has come to accept them as established facts. With regard to syphilis, however, the practitioner maintains the cheerful view that the disease is a curable one, and in this he has the support of his medical textbook.

If one looks back a quarter of a century he can recall the time when the pathologist announced that aortitis was largely of syphilitic origin, but the clinician scouted the view. The same statement is true in regard



to aneurysm. It is now but a few years since both tabes and paresis were deemed not of syphilitic origin. The next advance was to call them para-syphilitic. Now, beyond the question of a doubt, they are admittedly syphilitic. Since the discovery of the spirochaete, these facts can be accurately proved.

The question of the involvement of the circulatory system by the spirochaete has occupied the speaker's attention. The question of involvement is especially interesting in cases of latent syphilis. For the demonstration of the spirochaetes in tissue, the latter must be secured fresh, while the tissue is still warm. This precaution is necessitated by the extreme fragility of the spirochaete, for a search for the latter, in tissue which has undergone post-mortem cooling, will show nothing. In all of the cases to be reported the tissue was secured from one-half to one hour after death. The fact that all of the material was secured from state cases, made this possible. It is interesting to note that in tissue from congenital cases, which abounds in spirochaetes, when cooled or frozen and then examined, all of the spirochaetes will be found to have disappeared.

In the search for the spirochaete in the organs of the circulatory system, three controls are made to guard against error. The organism when found is successively examined and either accepted or rejected by each of three men in succession. Only unmistakable spirochaetes, cut in longitudinal section, which do not admit of any mistaken identity, are accepted.

The material examined was taken routinely in the last one hundred and fifty autopsies performed by the speaker. Forty-one of these have been found to show syphilitic lesions. Twenty-five of the cases gave no history and showed no symptoms of the infections. Of these twenty-five, eight had been recognized and given treatment for syphilis earlier. They had given repeated negative Wassermanns and were regarded as cured. Some of the twenty-five patients had been married and their wives never showed any signs of syphilis. The hearts of the forty-one referred to, all showed lesions which have been proved to be associated with the spirochaete. Thus far, the spirochaete, itself, has been demonstrated in sixteen of the cases and the work is still proceeding.

Syphilis of the heart is a most common condition. Ten years ago, the lesions which we now know to be syphilitic would not have been called such. All the textbooks state that syphilis of the heart is a rare condition. This conception is absolutely wrong, as the present research proves. Gumma of the heart, to be sure, is extremely rare, but syphilitic involvement of the heart, as shown by the presence of spirochaetes, is common.

The clinical diagnosis in most of the twenty-five cases, the hearts from which showed syphilitic lesions, was cardiorenal disease. It is interesting to note that five of these cases showed diabetes. It cannot be said that these cases were due to syphilis, although it is known that many diabetics have positive Wassermanns and improve when put on neosalvarsan. In these five cases there were syphilitic lesions in the heart, aorta, adrenals and testes.

In examining sections from organs in cases of congenital syphilis, it is found that the spirochaete produces only parenchymatous changes in the heart muscle. Many of the fibers are vacuolated and show areas of fatty degeneration. Between the muscle fibers is pale-staining, edematous connective tissue. These areas contain great numbers of spirochaetes. It was only after seeing these changes repeatedly that the speaker thought of the possible association of syphilis. At present, however, syphilitic involvement can be diagnosed from the presence of such areas.

In other preparations the spirochaete is found lying in myxedematous areas, in the connective tissue. These areas show especially well when stained with mucin dyes. The reaction itself always suggests the presence of the spirochaete. The areas harboring the organism are found

extending along the vessels. The organisms, it seems, do not want to get far away from the supply of oxygen. Cellular infiltration may be marked. From the foregoing description, it can be seen that the lesions may be either parenchymatous or interstitial in type.

In sections from cases of the acquired form of syphilis, we find many areas of small celled infiltration. The spirochaetes are found lying among the increased cells. These findings occurred in cases which gave no history of a syphilitic infection and presented no symptoms of the disease. The areas of infiltration found are very diffuse. The cells consist largely of lymphocytes and plasma cells. The background of the areas is granular and the areas themselves are edematous.

The coronaries often tend to be obliterated by the syphilitic process, and in such cases the veins are found to be much enlarged. Healing of the syphilitic patches may occur. However, healing is not to be regarded as complete until the patches have become definitely and entirely hyaline and contain no vacuoles. Such healed areas do occur, but in all of the specimens examined, some active areas were found in the tissues. In congenital cases, the endocardium and epicardium are found to be similarly affected. The process results in the formation of sclerotic patches in the endocardium, which as a result is much thickened, sometimes twice normal. The lesions are also the same in the aorta and in the vasa vasorum. There is marked perivascular infiltration with spirochaetes. The adventitia is found to be thick and there is often a hyaline perivascular thickening. The wall also shows proliferation.

In the acquired cases of syphilis, the lesions are more likely to be those of the obliterating endarteritis type. Also there may be definite syphilitic granulomata. The number of spirochaetes found in acquired cases is never as great as that observed in congenital cases.

The same changes are observed in the papillary muscle. Areas of the muscle show proliferation of fibroblastic cells and are edematous. The parts of the heart chiefly involved in the syphilitic lesions are the anterior and posterior walls of the left ventricle and the septum. The lesions are not as common in the auricles and right ventricle. Some of the patches are more or less healed and fibrosed. The healing was observed principally in those cases which showed no symptoms during life, although in each of these cases, some active areas were found.

There is a marked tendency, in the cases studied, for the coronaries to be obliterated by an endarteritis and by proliferated growths of the intima. Vacuoles are present. In all cases the semi-fluid areas are the harboring places for spirochaetes.

Syphilis may also be found in the heart in the curious lesions of myxomata. Many of these have been syphilitic lesions, unrecognized. They are really myxogummata. They contain much mucin and enormous numbers of spirochaetes. They are found only in congenital cases.

The practical application of all of the above lies in the conclusion that syphilis is incurable. The syphilitic patient should be told that he must be treated yearly, for the remainder of his life. Treatment undoubtedly reduces the aggressiveness of the spirochaetes. The spirochaete lives in symbiosis with the body tissues. Thus, after infection, with a mild strain of the organism, no damage may result for a time. However, after many years, when the resistance of the individual has been lowered, the organisms may become aggressive and exceedingly active.

A negative Wassermann on a patient has absolutely no significance. The physician as an average has absolutely no conception of the prevalence of syphilis. It is undoubtedly the most common disease in the country. The number of physicians infected innocently in this country is enormous. Thus, there are said to be 250 in Chicago alone.

The only true test for syphilis is the autopsy test, with examination of the heart, adrenals, aorta and testes. In the male the lesions will invariably be present in the testes. Syphilitic changes in the testes are



easily differentiated from other changes. The question of the symbiosis of the spirochaetes with the body tissues is the most important medical question of the day.

Mercury administration is far more effective in the condition than is salvarsan. Tissues of patients treated with mercury show fewer spirochaetes. After five doses of neo-salvarsan the tissues have been found to be still loaded with spirochaetes.

The hygienic treatment of syphilitic patients should be an important part of the therapy employed. The syphilitic patient should be advised against strenuous work or strenuous activities. The restrictions should resemble those placed on patients suffering with tuberculosis. Food of suitable quality, abundant rest and an outdoor life should be recommended. The problem of the human carriers of the infection is one of the most important.

H. T. Karsner, in opening the discussion, paid a tribute to the important work which the speaker has done in the past and is doing at the present time. Frequently one sees pathological changes in the heart tissue which do not fit in with present classifications. Thus, the term myocarditis is a broad one, and no specific causes, often, are given. Not enough attention has been paid to the etiological factor. Also, the light thrown by the speaker on the various pericardial thickenings that one so often sees, is important.

J. A. Riley, asked if spirochaetes had been found in the pancreas in the cases mentioned by the speaker, which showed diabetes?

R. K. Updegraff inquired whether the spirochaetes are especially inaccessible in heart muscle, as they are in the nervous system, for example, thus accounting for the large number of organisms found there? Relative to treatment, the value of salvarsan in acute cases is unquestionable.

H. N. Cole asked how recent the infection was, in any of the cases which the speaker had examined? The old case of syphilis is undoubtedly incurable. Results have, however, been hoped for in recent cases of the disease which have been subjected to competent treatment.

C. F. Hoover called attention to the fact that persistence of syphilitic infection had been recognized by the clinician long before it was confirmed by the pathologist. All of the points of involvement, mentioned by the speaker, were recognized by the French clinician Fournier many years ago. The latter clinician wrote many works for popular consumption. When he spoke of recovery, he merely meant that the symptoms could be held in abeyance for many years. His advice was that a patient suffering from syphilis should be given a course of mercury for one month in each year throughout life. The value of the work reported by the speaker is undoubted, but it is scarcely fair to say that the clinician has not held the same view previously.

A. S. Warthin, re rebuttal, said that in the diabetic cases no spirochaetes had been found in the pancreas. Of the cases investigated, all had acquired their initial lesion some years before. The speaker said that his views were even more pessimistic than those of Fournier. To prove the curability of syphilis one must be able to show the possible occurrence of a second chancre.

Syphilitic therapy should be initiated in cardiac-renal disease, in men of thirty to forty years. They should be given mercury. Many cardiac anomalies are due to syphilis. Eugenically one can never give a patient who has had syphilis a clean bill of health.

C. F. Hoover called attention to the case of a young boy, whom he had seen in one of the German clinics, who had both healed and unhealed lesions of congenital syphilis, and at the same time showed a chancre. The German clinicians believe in re-infection. The explanation might be that the second infection was due to an organism of another strain. However, the correct view is unknown.

## EXPERIMENTAL MEDICINE SECTION

The seventy-ninth regular meeting of this section was held Friday, February 12, 1915, at the Cleveland Medical Library, with T. Wingate Todd, F. R. C. S., in the chair. The program follows:

**1. The Effect of Feeding Thyroid, in Variable Amount and Iodin Content, on Tadpoles, by C. H. Lenhart.**

The tadpoles used for the experiment were free-swimming forms about one week old. These were fed on hog's liver every other day. On the alternate days the tadpoles were fed thyroid, in powdered form, and of known iodine content. After the period of thyroid feeding, which extended over one hour each day, the water in which the tadpoles were kept was changed.

The effect of feeding potassium iodid was found to be negative. The tadpoles fed on iodo-albin developed some disease associated with the formation of large, lateral, abdominal vesicles.

Various forms of iodine, thyroid and otherwise were used in the feeding. The general result from the entire series was that the feeding of thyroid in small quantities and consequently with a low or moderate iodine content produced more rapid growth and differentiation in the tadpoles, the latter showing large functioning hind-legs, large frog heads and large mouths, with prominent eyes. The tadpoles showed rapid emaciation when fed large amounts of iodine.

Feeding of cracker dust or keeping the tadpoles in a refrigerator was found to delay the progress of emaciation and to postpone death. In the case of the cracker dust the result was due to the fact that this food helped the animal to meet the demand of a more active metabolism, due to thyroid stimulation, without such extensive destruction of body tissues. Also, when the tadpoles were kept in a refrigerator the metabolism tended to be reduced by the cold and emaciation was consequently less rapid.

It would be consistent to suppose that the action of the iodine in causing both differentiation and emaciation is merely the same pharmacological action of the same drug, when used in larger or smaller quantities. The fact that animals are so sensitive to even the smallest increases in the amount of iodine in thyroid fed them, might offer an excellent test for the iodine content of any given thyroid.

J. H. Hewett, in opening the discussion, said that some years ago he had conducted experiments along the same line as those reported by the speaker, although not on a strictly scientific basis. He showed a number of mounts showing the degree of size and amount of differentiation in tadpoles after thyroid feeding. In some of the experiments, the tadpoles died after the formation of a number of large abdominal vesicles, similar to those reported by the speaker. On puncture the vesicles were found to contain amoeba.

David Marine commented on the extremely sensitive reaction which tadpoles give when fed on thyroid, varying with the iodine content. He declared this biologic test, for the activity of any given thyroid, to be far superior to any chemical method. The affinity of thyroid for iodine illustrates that thyroid is an extremely powerful drug. Great results are obtained from even minute doses. The actions of thyroid in stimulating differentiation and causing emaciation are pharmacologically compatible. Would this test give the difference in function between a carcinomatous and cretan thyroid? It might show an organ antagonism. As is well known, the thymus retards growth, while the thyroid aids it.

P. J. Hanzlik called attention to the possible inhibitory action of iodine on enzyme inhibiting agents according to the view of Jobling.

**2. Clinical Actions of Veratrum, by R. J. Collins.**

The present report covers the effect of veratrum administration on eight patients. The preparation of veratrum used was the tincture of veratrum album.



The patients studied were divided into two groups, the one composed of convalescent nephritics, the other of several cases of hypertonus. In each case the results on administration were a marked diminution in the systolic and diastolic blood pressures, with slowing of the pulse. The reduction in the diastolic pressures were not as great in the hypertonus cases as in the convalescent nephritics, however.

The average dose given was about fifty minims. Most of the patients suffered from nausea after administration, although the circulatory effects obtained existed independently of this and other symptoms of "toxicity." The present results are to be checked up later with a larger series.

E. A. Houck called attention to the censure of the use of veratrum in obstetrics, which Williams emphasizes in his text. He declared that if further experiments support the present findings, then the former use of the drug in America will be vindicated.

P. J. Hanzlik pointed out that the clinical actions of veratrum were consistent with the pharmacological, the drug acting promptly and efficiently. It is important to note that the circulatory effects are produced independently of nausea and vomiting. The actions of veratrum are not to be confused with those of veratrin, the effective alkaloid in veratrum being protoveratrin. Preparations of the same species of veratrum differ. Thus, in one case under observation three hundred minims of a tincture, procured locally, were administered without any effects. The drug should be effective as a symptomatic remedy in clinical cases of tachycardia and high blood pressure.

### **3. The Effects of Chelidonin on Smooth Muscle in Intact and Surviving Organs, by P. J. Hanzlik.**

Chelidonin is the alkaloid of *chelidoneum majus*, which belongs to the Papaveraceae. Previous investigators have found the general and systematic effects of this drug to be closely similar to those of morphin, with the important difference that chelidonin produces practically no subsequent irritation of the central nervous system.

Therapeutically the drug should prove beneficial in the treatment of such symptoms as asthma, colic and various enteralgias and gastralgias and particularly in pediatric practice.

J. J. R. Macleod, in opening the discussion, asked whether epinephrin was antagonistic to chelidonin.

P. J. Hanzlik, in rebuttal, said that epinephrin acts on the sympathetic endings while chelidonin acts on the smooth muscle, and that certain effects would be similar, others not.

### **4. Precipitation of Serum Albumin and Glutin by Alkaloidal Reagents, by P. J. Hanzlik.**

The mechanism of the precipitation of horse-serum and glutin by tannin is different from that of certain precipitants commonly known as alkaloidal reagents. With these a certain amount of free acid (hydrogen ion concentration) is necessary for the formation of the complex, insoluble compounds.

Tannin behaves like certain alcohols, e. g., resorcin, phenol, hydroquinone and propyl alcohol, since the maximum of precipitation in both cases corresponds to the isoelectric point in serum albumin and glutin.

Precipitation of serum is uninfluenced by wide difference of concentration and the addition of such neutral salts as chlorid and sulphocyanid.

## CLINICAL AND PATHOLOGICAL SECTION

The one hundred and sixth regular meeting of this section was held in conjunction with the Lakeside Medical Society, Friday, February 5, 1915, at Lakeside Hospital, the Chairman, H. O. Ruh, in the chair.

The regular program follows:

**1. Presentation of Surgical Cases, by C. E. Briggs.**

**(a) Carcinoma of Malar Region.**

Patient, aged 55, fell two years ago, striking left malar prominence. In July, 1914, he noticed a swelling in the region. Two months ago a lump appeared there, hard, circumscribed, not movable, bone not involved. Having been diagnosed as a periosteal sarcoma the mass was removed. On section it proved to be a cancer of the epithelial type, showing large epithelial pearls. It is difficult to say what was the source of the epithelial tissue in this case.

**(b) Sarcoma of Testicle.**

Patient six weeks ago noticed swelling on left side of scrotum. There was no pain accompanying it. Later, a swelling was noted over the left external ring. The von Pirquet test was positive. The diagnosis of tuberculosis epididymitis was made. The lungs showed some signs of tuberculosis. In the opinion of some clinicians who saw the case, the prostate and seminal vesicles were involved. The testicle was removed, and the cord taken off well into the pelvis. On section the tumor proved to have involved the testicle. It was a round-celled sarcoma. It was probably primary in the testicle and secondary in the epididymis. The diagnosis had, however, been obscured by a hydrocele which accompanied it.

**(c) Tumor of left Iliac Fossa.**

Patient a boy, aged 19. Patient showed a swelling in his left leg and a lump in his left side. He was injured two years ago, when he was caught between two boxes and severely squeezed. Two weeks ago the pain and swelling appeared in the left iliac region and the swelling in the leg appeared one week ago. The mass in the left iliac fossa was palpable but not painful. Rectal examination showed the prostate and seminal vesicles to be enlarged on the left side. The white blood count showed 8,800 cells. After entrance to the hospital the femoral glands became enlarged and the mass has become more tender. The leucocytes increased first to 12,000 and later to 15,000. The patient was also carrying a temperature. The case was operated and the iliac mass removed. It proved on section to be a round cell sarcoma. It was a very large growth and seemed to extend down through the pelvis, so that it was possible to palpate it through the rectum. On the basis of the oedema of the scrotum which was present, together with the leucocytosis, elevation of temperature, spasm of ilio-psoas muscle, sensitiveness over the tumor, and the enlargement of the inguinal and femoral glands, the case looked as if the basis of the trouble was an inflammatory process.

**(d) Adhesions in the Right Lumbar Region.**

Patient was a man, aged 65. He complained of pain in the right hypochondrium, iliac and lumbar regions. A definite mass could be palpated in the right hypochondrium extending to the right inguinal region. The white blood count was 9,000. An exploratory incision was made, after which a diagnosis was given as inoperable tumor of the right kidney. Three days after the exploratory operation the temperature rose to 101, where it persisted until the exitus lethalis. The patient died suddenly. At post-mortem, death was found to have been due to pulmonary embolus. In the right iliac region an abscess was found extending from the appendix down the psoas muscle under Poupart's ligament. No tumor was present, but the tumor mass had been formed by a large mass of adhesions.



(e) Effects Following Removal of a Very Large Thyroid.

The patient had had goitre for 12 years, following an old injury. When the patient entered the hospital, the neck measured twenty-two inches in circumference. After removal of the thyroid, the same measurement was fourteen inches. Following the operation the patient made an uninterrupted recovery and has continued to improve since. The tumor was thought to have been adenomatous, but on section it proved to be uniform in structure throughout, but not adenomatous in type.

(f) Demonstration of X-Ray Plates.

The patient on whom the plate was taken was a woman, who came into the hospital with the diagnosis of traumatic arthritis. X-ray showed a fracture with rarification of bone, which looked like a bone cyst or giant cell sarcoma. An incision was made directly over the point of injury. A cavity was encountered which possessed no definite wall. Curettings from the cavity proved to be structurally giant cell sarcoma.

The second plate was from a case of pyopneumothorax, which developed following an empyema.

(g) Fracture of the Semilunar Bone.

The patient was a young man who had had a disability of his wrist for a period of six years. The diagnosis before he entered the hospital was ganglion of the wrist. There was absolutely no history of injury. The most important sign was a limitation of extension over flexion, at the wrist. The X-ray showed the very unusual condition of fracture of the semilunar bone. An incision was made and both fragments of the semilunar bone removed. The patient is expected to make a good recovery with restoration of function.

(h) Sebaceous Cyst of the Sternum.

The patient had a small fluctuating area over the sternum with several scars in the vicinity. A diagnosis of tuberculosis of the sternum was made. The fluctuating mass proved to be a sebaceous cyst, on operation. The unusual location probably accounted for the error in diagnosis.

(i) Tuberculosis of the Cervical Glands.

The patient had a circumscribed tumor of the neck, approximately seven cm. in diameter. It had been present for several months. On examination it was found to be solid but not sensitive. It was thought to be, possibly, an adenoma of the extreme posterior part of the thyroid. After the patient had been in the house a few days he showed a temperature suggestive of inflammation. Finally a diagnosis of bronchial cyst was made. At operation the tumor proved to be a tuberculous gland of the neck.

## 2. Unusual Case of Perforation of Stomach and Diaphragm, Traumatic, by R. H. Birge.

The patient was a man who had accidentally shot himself while cleaning a gun. At operation it was found that in addition to the perforation of the anterior abdominal wall, there was a perforation of the stomach and diaphragm. The unusual feature of the case was the fact that the stomach showed only a single perforation. The explanation, probably, was that the bullet had struck the stomach at a point where it was folded on itself, thus clipping a piece of tissue off of the margin. This appeared on examination as a single perforation, although technically, the bullet had perforated both the anterior and posterior walls.

## 3. Presentation of Three Orthopedic Cases, by G. J. Bauman.

(a) Talipes Equines.

The patient was a boy with talipes equines, a result of a preceding anterior poliomyelitis. In walking he used only the tip of his toes. The treatment given was lengthening of the Achilles tendon by a Z-shaped separation and anastomosis, followed by manipulation and lengthening of the fascia. The result is promising.

(b) Equina Varus, Affecting Both Feet.

The origin of the trouble, occurring in a boy of early age, was a preceding anterior poliomyelitis. The treatment given was the same as that used in the preceding case. In addition, a wedge-shaped piece of the bone was removed from the tarsus of the right foot.

(c) Congenital Club Feet.

The case was one of a girl seventeen years old, with congenital club feet. The entire left leg was twisted inward. At the first operation a wedge-shaped piece of bone was removed from the outer side of the left foot, following which a tenotomy and fasciotomy were performed. On the right side an osteotomy of the tibia was performed, and later an osteotomy of both the tibia and fibula on the left side, for the reason that the condition of the bones were responsible for the twisting of the feet.

(d) Spastic Hemiplegia and Cerebral Paralysis.

The patient was a small girl. Resection of the nerves supplying the spastic muscle was performed. The incision was made in the popliteal space and the fibers supplying the gastrocnemius was resected with the electric needle for a distance of two inches. The result is encouraging and patient is showing improvement in function of the part affected.

(e) Flail Ankle.

The patient, a little girl, had a flail ankle, with foot in calcaneocavus with slight equinus. There was marked cavus and marked calcaneus. A wedge-shaped piece of bone was removed from the dorsum of the foot, after which the foot was put up in extreme flexion. This operation overcame the cavus and valgus. Following this operation a portion of the astragalus and a portion of the posterior part of the tibia will be removed. The foot will then be put up at a right angle. This will give a stiff, but serviceable, foot.

**3. Presentation of Two Skin Cases, by M. A. Blankenthorn.**

(a) Large Gumma of the Skin with Diabetes.

The patient was a woman, aged 42. There was absolutely no history of lues. On physical examination it was found that the eyes did not react to light. The nasal septum showed a perforation, dating back three months ago. Nine months ago the patient fell, injuring her knee. It became very much swollen and discolored. Later it began to discharge pus. The surface became markedly ulcerated and refused to heal. Examination of the urine showed presence of sugar. A lumbar puncture was performed. The fluid obtained showed no increase in the cell count but gave a positive Wassermann. The patient was given three injections of salvarsan at weekly intervals, and small doses of potassium iodid. Biniodid injections were also given. The knee ulcer, really a broken down gumma, shows at present a tendency to heal. It is also less painful and there is less interference with function than before treatment. The sugar in the urine decreased on treatment for a time, but has again increased in amount. The local application used on the knee was one per cent solution of aluminum acetate.

(b) Granulomata of Skin, for Diagnosis.

The patient was a colored woman, 52 years old, with no luetic history. There were no signs or symptoms of tuberculosis. Patient has had eleven children and one miscarriage. The patient shows large granulomata scattered diffusely over the body. These lesions first appeared three years ago, the first appearing on the cheek. The lesions are neither painful nor do they cause itching, and show no tendency to scale. One year ago the patient noticed a swelling of the inguinal glands and one month ago the axillary glands began to swell. She has never been in contact with a person afflicted similarly as herself. The patient shows a negative Wassermann. Injection of increasing quantities of



tuberculin caused no reaction. Patient has lost no weight and has no lesions either on the palms of the hands or soles of the feet. The lesions are small, nodular, pigmented, involve all layers of the skin and are dry but not scaly.

H. N. Cole, in discussion, said that the patient had come from South Carolina, where she lived for two years. The possibilities in the case are lues, leucaemic tumors, leprosy and tuberculosis. Histological examination shows giant cells and blood vessels and markedly resembles tuberculosis. Tuberculosis of the skin is rare after 40 years. It is probably a lupus vulgaris of hematogenous type.

#### 4. Naevi of the Skin, by Allen Graham.

Several types of naevi exist, some of which never tend to become malignant. Relative to the histological status of the naevus cell, there is a difference of opinion between the English and German school.

All moles are benign at first and can be cured if excised in time. The malignant type arises from non-hairy moles. The greater the pigment the less the malignancy, and *vice versa*.

#### 5. Noguchi's Luetin Reaction, by O. P. Feil.

The speaker demonstrated two patients who showed the reaction on their arms. The reaction is best in latent lues, visceral lues and tertiary lues, especially if the Wassermann is positive.

H. N. Cole, in discussion, said that the results from the luetin reaction must be taken with a grain of salt. Thus, in five selected cases, all showed positive luetin reactions, although their Wassermann's were negative. Extract of liver in emulsion will give the reaction because patients in whom its use is feasible are sensitive to foreign proteids.

#### 6. Two Cases of Cirrhosis of the Liver, by C. D. Cristy.

The first was that of an Italian. The jaundice in this case began three months ago. There was anorexia and gastric trouble. The anorexia was especially pronounced for fats. Physical examination showed a small atrophic liver with no portal obstruction. The patient was markedly icteric with biliary pigments in urine and blood. The stools were clay-colored. Bile salts were also present in the urine and blood.

The second case was in a man, with onset four months ago. At that time he had jaundice for three weeks, which then cleared up. Six weeks ago the patient began to feel languid. On January first he had hematemesis. Four days later the abdomen swelled. Later four gallons of fluid were removed. At present there is no gastro-intestinal disturbance, although he did have gastric disturbance with his jaundice four months ago. Physical examination shows the same type of liver as case one, but the man has marked ascites with no icterus. Both the urine and blood show a slight test for bile. The stools also contain some bile, and are of fairly good color.

Cases, such as the above, show that those with complete portal obstruction are usually not icteric. In other words, to have formation of bile there must be a patent portal system. Without portal obstruction there is a marked jaundice.

#### 7. Presentation of a Case of Nephritis, Without Hypertonus, by H. L. Taylor.

Two types of nephritis must be recognized, toxic, and vascular or degenerative. With either form one may, or may not, encounter a hypertonus.

The patient shown had a systolic pressure of 110 and a diastolic of 70. When given an increased intake of fluid the increase did not appear in the form of increased elimination until two days later. The difference between the time of intake and output of salt also showed a two days' delay. The question arises whether the delay between the time of intake and the time of excretion of a known amount of salt is due to the fact that the salt has been in combination, or to the fact that the kidney is incompetent, functionally, to eliminate it?

### 8. Discussion of Therapeutic Indications from the Pathological Physiology of Nephritis, by C. F. Hoover.

The minute volume of blood through the heart, lungs and kidney may be normal, but there may be retention of salts and other substances in the blood. What shall we do to eliminate these? None of the alkaline diuretics will cause their excretion. The best means available is the hot pack. The good results are not due to the amount of water and uric acid excreted. The beneficial results are due to the elimination of some toxin.

In other cases, where the difficulty is not due to retention, but to lessened minute volume of blood through the kidney because of arteriosclerosis, theobromin is beneficial, because it aids in increasing the minute volume of blood through the kidneys. Rest in bed also increases the minute volume of blood and is beneficial.

Another factor to be considered is splanchnic hypertonus. In cardiovascular disease, digitalis and strophanthin do no good, but beneficial results follow the use of nitroglycerin. The reason is, that we thereby reduce the splanchnic hypertonus and increase the minute volume of blood through the kidney, thus causing an increased diuresis.

One case which came under observation showed hypertonus and suppression of urine. Later the patient showed normal blood pressure and passed considerable urine. Again the blood pressure rose, and again the patient showed suppression of urine. Hot packs mustard foot baths nitroglycerin and ipecac did not help him. In this case one was probably dealing with a pressor substance and a nephrolysin.

A dry uremia shows no retention of salts or body fluids, yet patients suffering from this condition develop a uremia and die with it. In nephritis there is probably as much alteration in the proteids of the blood themselves as with the kidney.

In local kidney disease, such as tuberculosis and lues, one does not get a high blood pressure. Probably in such a case there is no disturbance of body proteids, but the condition represents a pure kidney disease. However, the urine in such cases shows kidney changes. In lues, anti-luetic treatment will often clear them up.

### 9. Presentation of a Case of Syphilitic Aortitis, by C. F. Hoover.

The patient, a woman, showed all signs of an aortitis, and her husband, it was learned, was suffering with cerebro-spinal lues. After a few days' rest in bed, she improved markedly, and one might doubt whether she had suffered originally with an aortitis. The blood pressure, systolic, was 180 and the diastolic pressure was 100. This would point to a want of elasticity in the aorta, cutting short the catacrotis. Other causes possible are regional hypertonus and Basedow's disease. The X-ray plate confirmed the diagnosis of an aortitis.

### 10. Presentation of a Case, Showing an Anemia, by C. F. Hoover.

The patient in this case was aged 63, and had a positive luetic history, but with a negative Wassermann. The patient had a loud venous hum, tingling in finger tips, all reflexes present, no impairment of afferent impulses. The red blood count was 3,000,000. Hemoglobin was 45. White blood cells numbered 8,000. The color index then varied 8/10 and 1. The differential count shows a relative increase in the mononuclears. Is this a primary pernicious anemia or a lues of the central nervous system? Lumbar puncture gives a spinal fluid with nine cells. Differentiation in such cases can be made by observing the presence of a proximal or of an acro-ataxia. Thus, a proximal ataxia suggests spinal cord disease, especially a lues, while an acro-ataxia developing first, speaks in favor of a primary pernicious anemia.



## COUNCIL MEETING

At the Council of the Academy of Medicine held Wednesday, February 10, 1915, at the Bismarck, the following members were present: Doctors Moorehouse, Follansbee, Thomas, Cogan, Houck, Todd, Selzer, Ford, Weir, Lichty, Humiston, Webster, Sawyer, Sanford, and J. E. Tuckerman. Doctor Lichty presided, in the absence of the President.

The minutes of the last meeting were read and approved.

On motion the application of Doctor H. B. Stotter for active membership was denied.

On motion the names of the following applicants for active membership was ordered published: A. M. Baldwin, Paul E. Beach, Chas. Howard Bee, Walter B. Bucher, Edward M. Deacon, E. P. Edwards, Thos. Gruber, H. E. Mitchell, Wm. E. Mussun, Fred C. Oldenburg, F. A. Rice, Arthur E. Robertson, Eugene D. Rosewater, R. G. Schnee, J. S. Wimer.

On motion the name of the following applicant for membership in the Veterinary Section was ordered published: Mihaly Borsus, V.S.

On motion, M. B. Bonta was reinstated in active membership.

The resignation of Edward H. Schild, of Canton, Ohio, from non-resident membership was accepted.

The following were appointed delegates and alternates to the Ohio State Medical Association at its annual meeting in May:

Delegates—J. J. Thomas, J. E. Cogan, M. J. Lichty, J. P. Sawyer, J. E. Tuckerman.

Alternates—H. G. Sloan, W. H. Weir, J. M. Moore, Willard C. Stoner, W. J. Benner.

On motion the Secretary was directed to have presented to the April meeting of the Academy the subject of medical defense, and to make an announcement of the plan in the March program.

The Secretary was directed to read to the Academy a communication from the Alameda County Medical Association of California, asking the names of prominent men from the east who might be visiting San Francisco during the Exposition, with a view to having them appear before the society there.

A communication regarding House Bill No. 220, introduced by Representative Platt of Ashtabula, "to regulate the practice of chiropractic," was read. The Secretary was directed to communicate with the legislators the disapproval of the Academy of any bill which does not provide proper preliminary education for all who desire to treat the sick, irrespective of the names by which they designate themselves.

E. R. Selzer directed the attention of the Academy to Senate Bill No. 54, introduced by Mr. Mooney of this city, strengthening the educational requirements of pharmacists. On motion the Council endorsed the provisions of this bill.

On motion by J. J. Thomas, John Phillips was elected to fill the vacancy on the Milk Commission caused by the death of H. H. Powell.

A communication from the Ohio State Industrial Commission was referred to A. S. Storey, Chairman of the Civic Committee, with the request that he present the matter at the next meeting of the Academy.

## BOOK REVIEWS

**The Practical Medicine Series, 1914.**—Comprising Ten Volumes of the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Charles L. Mix, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University Medical School, and Robert T. Vaughan, Ph. B., M. D. **Volume I, General Medicine**, Edited by Frank Billings, M. S., M. D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A. M., M. D., Professor of Medicine, Illinois Post-Graduate Medical School. The Year Book Publishers, Chicago. Price of Series of ten volumes, \$10.00. Price of this volume, \$1.50.

This widely and favorably known work appears in its usual form of concise and well selected reviews. This, the first of two volumes for 1914, deals with Infectious Diseases, Diseases of the Lungs, Circulatory System and Kidneys and Metabolic Diseases. Seventy-five pages are given to Tuberculosis, with especial reference to radiography. As experience increases, conclusions from X-ray evidence alone are more and more guarded. Shadows in the region of the hilus especially must be judged with care and in connection with the clinical features of the case. The frequent association of a small centrally placed heart with tuberculosis is emphasized by X-ray reports. The remarks on artificial pneumothorax are inobstructive. The treatment is being quite widely used and its indications and contraindications better understood. Many reports indicate that the danger of air embolism has been exaggerated. There are some cases of sudden death, however, probably of other origin, such as reflex spasm of cerebral vessels.

In the treatment of arterial hypertension, the tendency seems to be distinctly away from the use of vaso dilators of the nitrite group. They are uncertain and fleeting in their effect. The aconite group more effectively lower the blood pressure and slow the heart. With the first signs of failing compensation or before, digitalis often gives symptomatic comfort. The renal factor in arterial hypertension is becoming more and more recognized even in cases without urinary findings. In the chapter on syphilitic aortitis, Gallavardin describes a group of cases in which hypertension is due to syphilitic renal disease. Mention also of syphilitic aortitis in inherited syphilis is of importance.

Under Hogkin's Disease several reports of growing pleomorphous diphtheroid organism from the glands are reviewed especially the work of Billings and Rosenow, including the results from the use of vaccines.

In connection with leukemia the benzol treatment is reviewed. It is considered a valuable addition to the therapy of the disease. The results though brilliant at times, are not constant.

The book gives a safe, conservative judgment on the subjects considered and is worth a careful reading from cover to cover. V. C. R.

**Infections of the Hand.**—A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand and Forearm. By Allen B. Kanavel, M. D., Assistant Professor of Surgery, Northwestern University Medical School, Attending Surgeon, Wesley and Cook County Hospitals, Chicago. Second Edition, Thoroughly Revised and Illustrated with 147 Engravings. Published by Lea & Febiger, 1914.

The appearance of the second edition of this work was a fulfillment of a foregone conclusion for the scope, method of handling of the subject and its extreme practicability demanded that the book be republished. To every general practitioner and surgeon the subject is of the greatest importance.

In an experience of several years in a large dispensary, the reviewer has met repeatedly infections of the hand and forearm which owe their direct severity to an improper handling when first seen. Simple wounds



have been sutured, various methods of sealing up a wound have been employed, wounds have not been properly cleansed, et cetera, et cetera, so that it is with especial satisfaction that I am able to review this work and recommend it to every practitioner and surgeon.

The first four chapters are taken up with lesser infections of the hand. Part II consists of grave infections: tendosynovitis, fascial-space abscesses, lymphangitis and diagnosis and principles of treatment. The author then discusses in detail the anatomy of the hand and forearm with reference to these infections, the results of a study of serial cross-sections of the hand, a study of the relations of the tendon sheaths, their anatomical distribution with surgical deductions.

A chapter of very great value is the one handling the subject of the relation of the synovial sheaths to the fascial spaces with results of experimental injection into the tendon sheaths and a study of the line of least resistance along which infections are likely to develop from these sheaths.

Chapter XI deals with sources of involvement of the tendon sheaths and fascial spaces. Having described the various spaces about the hand in previous chapters, he shows the source of infection most likely to infect each one. This, coupled with a study of the lines of spread of the infection with any given primary focus, is beautifully worked out.

In Chapter XIX the relation of lymphangitis to other types of infection and the lines of spread of lymphangitis, a study of the lymphatic channels by infection and liberal quotations from well known authors makes this chapter complete.

The various chapters on treatment of the various conditions are full, the technique well described and the after-treatment excellent. Following each chapter a definite, complete resumé is found, while the resumé of acute suppurative synovitis and fascial-space abscesses, together with prognosis, occupies a chapter.

For those who have charge of industrial accidents this work is indispensable, while very many deformed hands, the result of extensive inflammation and contraction, might be prevented if every physician was familiar with the importance of this subject and the complete manner in which this book handles it.

F. C. H.

#### **Medical Jurisprudence.**—A Statement of the Law of Forensic Medicine.

By Elmer D. Brothers, B. S., LL. B., Member of the Chicago Bar; Lecturer on Jurisprudence in the Medical and Dental Departments of the University of Illinois, and in John Marshall Law School. C. V. Mosby Company, 1914. Price, \$3.00.

This book is of especial value because it deals almost exclusively with the legal aspects of the subject. There are many works on the medical side of the medico legal problems dealing with various criminal procedures, methods of identification of body fluids, etc., but as the author states, practically none from the legal standpoint. Such subjects as agreement for surgical operation, civil and criminal malpractice, anesthetics and insanity are fully discussed. A certain amount of legal terminology is unavoidable from the nature of the work. In general, the subject is very clearly presented and suitable for physicians.

V. C. R.

#### **The Boys and Girls of Garden City.**—By Jean Dawson, A. M., Ph. D. Published by Ginn & Co.

This publication, which is intended for use in schools, is extremely well prepared. The essential principles of personal and municipal hygiene are well brought out in an attractive story of a group of children playing at city government. The material is not so presented as to give the impression that it is simply another thing to be studied, but rather so as to lead one along from fact to fact in a manner which should certainly be interesting to the children. The illustrations are well selected, and the book is well worthy of recommendation, not only for school use, but for any one who desires to get the fundamental principles of hygiene in a pleasant and convincing manner.

R. J. P.

## MEDICAL NEWS

**Education and War**—President Charles F. Thwing announces that Doctor George W. Crile will repeat his lecture on "Education and War" in the Amasa Stone Memorial Chapel, Wednesday evening, March 31, at 8:00 o'clock. Doctor Crile has consented to repeat his lecture by reason of the great numbers who were unable to gain admission at its first delivery. The lecture is open to the public.

---

**Stark County Medical Society.**—The one hundred and forty-eighth regular meeting was held at the Chamber of Commerce Rooms, 312 Market avenue, N., Canton, Ohio, Tuesday, March 16, 1915.

The following program was presented:

### Program

1. Paper—"Present Views About Pneumonia," Doctor M. J. Lichty, Vice-President Cleveland Academy of Medicine.

Discussion opened by Doctor E. J. March, Canton.

2. Paper—"Physicians' Defense by the State Society," Doctor J. Frank Kahler, Canton.

Discussions—Deny, Doctor T. Clark Miller, Massillon. Affirm, Doctor P. F. King, Alliance.

Election of Delegates to State Meeting—Doctor G. L. King, president, Alliance; Doctor L. A. Buchman, Secretary-Treasurer, Canton; Doctor G. C. Goudy, Corresponding Secretary, Canton.

---

**Award of the Gross Prize.**—It is announced by the trustees that the Samuel D. Gross prize of the Philadelphia Academy of Surgery for the year 1915 has been awarded to Doctor John Lawrence Yates, of Milwaukee, Wis., for his essay on "Surgery in the Treatment of Hodgkins' Disease." The amount of this prize is \$1,500.

---

**On March 11th** the total of the New York Belgian Relief Fund amounted to \$969,851.24; the New York Red Cross Fund to \$467,779.75; the American Ambulance Hospital Fund to \$348,389.82; the American Jewish Relief Fund to \$532,937.14; and the New York Polish Relief Fund to \$25,225.47.

---

**A Woman's Number.**—The May issue of the *Medical Review of Reviews* is to be a Woman's Number. All the articles contributed will be from the pens of women physicians whose work has achieved national importance. With the growth of the feminist movement, the economic position of women has attracted universal attention. As medicine was practically the first profession open to women, it is only proper at this time to consider whether their entrance into the medical profession has been of benefit.

In order that women may present testimony by which they should be judged, it has been deemed advisable to give them an entire issue to present the evidence of the value of their accomplishments. In the laboratory, in the hospital, in institutions, at the bedside, and in public service, women physicians have performed a valuable function. As a tribute to their earnestness, enthusiasm, modesty, energy, perseverance, and scientific acumen, the May number of the *Medical Review of Reviews* will be dedicated to the women physicians of America.

---

**The Medical Society of the State of New York** will hold its hundred and ninth annual meeting at Buffalo, April 27-29. On account of the European War, this will probably be the largest medical meeting



of the year, except perhaps that of the A. M. A. in San Francisco. Through the co-operation of the military authorities, the meeting will be held in the 65th Regiment Armory—not the old arsenal, now the City Convention Hall. This armory is one of the largest in the country and will afford accommodations for all activities of the meeting, except the annual banquet. A restaurant will be conducted in the building, there will be ample space for commercial and scientific exhibits, and an abundance of halls for general and section meetings. Even an automobile park will be provided on the armory grounds. No one need leave the building except to sleep, unless possibly to attend lectures to the laity which will be given by prominent visiting physicians and which will probably be held in the Masten Park High School, across the street.

The choice of the armory is fortunate in another sense, as indicating the organization of the State Society as an arm of the State government. On the last night of the meeting, a regimental parade and review by General Gorgas will be held.

We venture to assert that this meeting will be conducted to insure greater comfort and convenience to guests than any other gathering of the kind. There will be no waste of time in passing from one section to another, no mental strain in fixing one's attention on gall stones while, on the other side of a velvet (?) curtain, some one is discoursing on ventral fixation or, an organization of "hundred-point" men is discussing the best methods of selling varnish.

The local committee of arrangements consists of the chairmen of the following sub-committees. Suggestions and offers of assistance will be gladly received. We understand that the annual meeting is entirely self-supporting, from the sale of concessions, so that no financial contributions will be asked.

#### Sub-Committees of Arrangements

*Reception*—Chas. G. Stockton, chairman, 436 Franklin street; Arthur W. Hurd, Henry R. Hopkins, William H. Thornton, Henry C. Bushwell, Herman E. Hayd, Edward J. Meyer, Harvey P. Gaylord, DeLancey Rochester, Allen A. Jones, Edgar R. McGuire, Thomas J. Walsh, Bernard Cohen, James A. Gardner, Francis E. Fronczak, Lee Masten Francis.

*Meeting Rooms*—Nelson G. Russell, chairman, 469 Franklin street; Albert H. Briggs, Renwick R. Ross, Stephen Y. Howell, Theodore M. Leonard, Arthur C. Schaefer.

*Publicity*—A. L. Benedict, chairman, 228 Summer street; William W. Quinton, George A. Himmelsbach.

*Ladies*—Edith R. Hatch, chairman, 2620 Main street; Maude J. Frye, Myrtle A. Hoag, Lucy A. Kenner, Caroline Lichtenberg, Elizabeth Dort, Katherine Munhall.

*Transportation*—Carl G. Leo-Wolf, chairman, 481 Franklin street; William Gaertner, Robert E. DeCeu, Edward M. Tracy, Nelson W. Strohm.

*Banquets and Hotels*—Lesser Kauffman, chairman, 534 Elmwood avenue; Joseph F. Whitwell, William G. Bissell, Earl P. Lothrop, Frederick J. Parmenter.

*Exhibits and Audits*—Albert J. Lytle, chairman, 200 Lexington avenue; Arthur G. Bennett, Julius Richter.

*Registration and Information*.—Edw. A. Sharp, chairman, 481 Franklin street; John R. Gray, Clayton M. Brown, John L. Butsch, William L. Phillips, Frank N. Potts, Descum C. McKenney, Herman K. DeGroat, William F. Jacobs, Herbert A. Smith, William Ward Plummer, Augustus W. Hengerer, Nadina R. Kavinoky.

**Public Lectures** in connection with the one hundred and ninth annual meeting of the Medical Society of the State of New York, in Buffalo.

Monday evening, April 26: Doctor Charles J. Hastings, Medical Officer of Health, Toronto, Ontario. Subject: "What Are We Doing to Improve Our Race?"

Tuesday afternoon, April 27: Julia C. Lathrop, Chief of Children's Bureau, U. S. Department of Labor, Washington, D. C. Subject: "Why the Children's Bureau Studies Infant Mortality."

Tuesday evening, April 27: Doctor J. W. Shereschewsky, Surgeon, Public Health Service, Washington, D. C. Subject: "The Relation of Heat to the Summer Mortality of Infants."

Wednesday afternoon, April 28: Henry H. Goddard, Ph. D., Director, Department of Research, The Training School, Vineland, N. J. Subject: "The Subnormal Child: Who is He and What Must be Done for Him?" Illustrated.

Wednesday evening, April 28: Doctor Thomas Darlington, American Iron and Steel Institute, New York. Subject: "Welfare Work in Industry." Illustrated.

Thursday afternoon, April 29: Edward M. VanCleave, Managing Director, National Committee for the Prevention of Blindness, New York. Subject: "Saving Sight and Saving Citizens." Illustrated.

Thursday evening, April 29: George S. Barrows, Philadelphia, representing the Illuminating Engineers Society. Subject: "Right and Wrong Methods of Interior Illumination." Illustrated.

Last title subject to change.

---

**Annual Meeting of the Ohio State Medical Association, May 4-5-6.**—In a letter to *The Ohio State Medical Journal* from Doctor E. O. Smith, chairman of the committee on arrangements for the seventieth annual meeting of the State Society, which will be held in Cincinnati, May 4, 5 and 6, it is stated that plans are progressing nicely and that the members of the Cincinnati Academy hope to entertain in Cincinnati the largest State meeting in the history of the association.

Doctor W. S. Keller is treasurer of the committee. Doctor Frank B. Cross will have charge of publicity; Doctor Mark A. Brown is in charge of entertainment; Doctor Frank Lamb is arranging for hotels and places of meeting; Doctor Charles T. Souther is in charge of badges and buttons, and Doctor Louis Ransohoff has charge of finances and the exhibits.

Already plans have been completed for three other meetings in Cincinnati during the same week. As previously announced, the Ohio State Clinical Society will meet there on May 3 and 4 bringing its sessions to a close on the afternoon the State Society convenes. The State association of medical men engaged in school inspection work will hold its annual session there on the fifth. In addition, the Inter-State Association of Anesthetists comprising representatives from six or seven of the central States, will hold its initial meeting there on the fourth and fifth. This meeting is in charge of Doctors E. I. McKesson, of Toledo; P. R. Coble, of Indianapolis; F. W. McMechan, of Cincinnati, and W. H. Long, of Louisville.

Arrangements have been completed for elaborate exhibits, both scientific and commercial. One of these will be presented by the State Board of Health, which had an extensive exhibit at the Columbus meeting last year.

One of the big drawing cards of the Cincinnati meeting will be the recently completed Cincinnati General Hospital. Arrangements will be made to show visitors through the new institution. This alone will be well worth the trip to Cincinnati.



By March 1, two-thirds of the exhibit space had been sold.

While the completed program will not be announced until April, it is known that the visiting essayists invited to address the general sections of the association are Doctor George Dock, of St. Louis, who will deliver the Address in Medicine, and Doctor Charles L. Scudder, of Boston, who will deliver the Address in Surgery. Doctor Scudder's paper will be on "The Treatment of Fractures."

---

**Interstate Association of Anesthetists.**—The Interstate Association of Anesthetists will hold its organization meeting in conjunction with the Ohio State Medical Association, in Cincinnati, Ohio, May 4-5, at which time an elaborate scientific program devoted exclusively to recent advances in anesthesia and analgesia will be presented.

"Foreword," Robert Carothers, Councillor 1st District, O. S. M. A.; "Selection of the Anesthetic," Emmett F. Horine, Louisville, Ky.; "Nitrous Oxid Anesthesia in Obstetrics," Arthur E. Guedel, Indianapolis, Ind.; "Blood-Pressure Under General Anesthesia," E. I. McKesson, Toledo, O.; "Conductive Analgesia for Intraoral Operations," Hugh MacMillan, Cincinnati, O.; "Alkaloidal Medication in Relation to Anesthesia and Analgesia," Isabella C. Herb, Chicago, Ill.; "Anesthesia for Brain Surgery," Charles K. Teter, Cleveland, O.; "Use of Music During Local Analgesia," W. P. Burdick, Kane, Pa.; "Magnesium Sulphate Narcosis," D. D. DeNeen, Cincinnati, O.; "Ethyl Chlorid Anesthesia," R. A. Rice, Columbus, O.; "Intravenous Anesthesia," C. L. Candler, Detroit, Mich.; "Preparatory, Operative and Postoperative Precautions for Hazardous Anesthetic Risks," Moses Salzer, Cincinnati, O.; "Vapor Anesthesia for Intraoral Surgery," Paul R. Coble, Indianapolis, Ind.; "Local Anesthesia for Hernia Operations," Charles T. Souther, Cincinnati, O.; "Surgical Mortality from the Standpoint of the Anesthetist," H. W. Kearney, Washington, D. C.; "Nitrous Oxid-Oxygen Analgesia in Dentistry," Edward S. Barber, Chicago, Ill.; "Posture and Muscular Relaxation as Factors in the Newer Conception of Shock," Willis D. Gatch, Indianapolis, Ind.; "Spinal Anesthesia," John Overton, North Tulsa, Okla.; "Acapnia," E. M. Sanders, Nashville, Tenn.; "Local Analgesia for Nose, Throat and Larynx Operations," Myron T. Metzenbaum, Cleveland, O.; "Anesthesia—a Full-fledged Specialty," W. Hamilton Long, Louisville, Ky.; "Anesthesia, Anesthetists and Workmen's Compensation Laws," F. H. McMechan, Cincinnati, O.; "Intratracheal Anesthesia," B. Merrill Ricketts, Cincinnati, O.; with "Demonstration of a Portable Field-Apparatus," by Major Allie Williams, U. S. A., Washington, D. C.

Headquarters, assembly room and exhibits will be in the New Hotel Gibson, in which all the sections of the Ohio State Medical Association will also meet. An informal organization dinner will be served on the evening of May 4, after which the visiting anesthetists will be the guests, at a smoker, of the local entertainment committee, headed by Doctor E. O. Smith. Visiting ladies will be entertained by Doctor Nora Crotty and her committee at a reception and theater party.

Anesthetists, surgical and dental, as well as interested surgeons and general practitioners who wish to participate in the proceedings, are cordially invited to attend. For further information and dinner reservations, address F. H. McMechan, M.D., Secretary, 1044 Wesley Ave., Cincinnati, Ohio.

---

**The Seventh Pan-American Congress** will meet in San Francisco, June 17-21, inclusive. It assembles pursuant to invitation of the President of the United States, issued in accordance with an act of Congress approved March 3, 1915.

The countries and colonies embraced in the Congress are the Argentine Republic, Bolivia, Brazil, Canada, Colombia, Cuba, Chile, Costa Rica, El Salvador, Ecuador, Guatamala, Honduras, Haiti, Hawaii, Mexico, Martinique, Nicaragua, Panama, Paraguay, Peru, Santo Domingo, United States, Uruguay, Venezuela, British Guiana, Dutch Guiana, French Guiana, Jamaica, Barbadoes, St. Thomas, and St. Vincent. The organization of the Congress is perfected in these countries, and the majority of them have signified their intention to be represented by duly accredited delegates.

The Congress will meet in seven sections, viz.: (1) Medicine; (2) Surgery; (3) Obstetrics and Gynecology; (4) Anatomy, Physiology, Pathology and Bacteriology; (5) Tropical Medicine and General Sanitation; (6) Laryngology, Rhinology and Otology; (7) Medical Literature.

All members of the organized medical profession of the constituent countries are eligible and are invited to become members. The membership fee is \$5.00, and entitles the holder to a complete set of the transactions. Advance registrations are solicited and should be sent with membership fee to the Treasurer, Doctor Henry P. Newman, Timken Building, San Diego, California.

The general railroad rate of one fare for the round trip, good for three months, made on account of the Panama-Pacific Exposition at San Francisco, and the California Exposition at San Diego, is available for the Pan-American Medical Congress.

The Palace Hotel will be headquarters.

The first Pan-American Medical Congress was most successfully held in the United States in 1893. Five intervening congresses have been held in Latin American countries. It now devolves upon the medical profession of the United States to make this, the seventh, the most successful in the series.

Charles A. L. Reed, President, Union Central Building, Cincinnati.

Ramon Guiteras, Secretary General, 80 Madison avenue, New York City.

Harry M. Sherman, Chairman Committee of Arrangements, 350 Post street, San Francisco.

Philip Mills Jones, Special Committee on Hotels, 135 Stockton street, San Francisco.

---

**Subscription Swindlers at Work in Pennsylvania.**—"Notice has come to *The Journal of the American Medical Association* that one or more subscription swindlers are working in Pennsylvania and Ohio, claiming to represent *The Journal of the American Medical Association*, collecting money for subscriptions. Readers are warned not to pay money to any solicitor without first assuring themselves that he is properly authorized."

---

**Nitrous Oxid Gas in Obstetrics.**—F. W. Lynch, Chicago, reports that since July, 1913, he has used nitrous oxid gas in long-continued analgesia in obstetric work, and has kept it up for more than an hour in thirty-four cases. The method used must not be confounded with the older use of gas or complete anesthesia about the time of actual birth. He uses a nosepiece such as that employed by dentists, and the patient is told to breathe deeply but rapidly through the nose. Five or six respirations produce analgesia, and then the nosepiece is put over the mouth, the patient told to breathe through the mouth, and the analgesia is maintained by mixing oxygen with the gas until the end of the pain.—*J. A. M. A.*



# The Cleveland Medical Journal

---

Vol. XIV.

APRIL, 1915

No. 4

---

## THE TEETH OF PRIMITIVE MAN\*

By T. WINGATE TODD, F. R. C. S., from the Department of Anatomy,  
Western Reserve University, Cleveland, Ohio

In order rightly to comprehend the significance of features displayed by the teeth of primitive man, it will be well first to recount briefly certain characteristics of modern human teeth, and to contrast with them the dentition of the anthropoid apes. We shall throughout this discussion confine our remarks to the permanent dentition.

The teeth may be studied either as individuals or in the series, the sixteen teeth in maxilla or mandible forming what is known as the dental arcade. It is well to remember that there are no two teeth identical in all particulars, just as there are no two dental arcades or hard palates alike. In fact, plaster casts of the teeth and jaws could be utilized, Hopewell-Smith points out, for the identification of criminals as fingerprints are used at present. We can but deal with generalities, but these generalities are of application wide enough to assist us materially in our present investigation.

The maxillary dental arcade is elliptical while that of the mandible exhibits a parabolic outline. The precise curves of these arches are liable to considerable variation. Indeed, the ellipse of the maxillary arcade is found only in 70 per cent of individuals. In these the broadest part of the palate lies between the second molar teeth. In 22 per cent of people examined (Dieulafé and Tournier) the large size of the upper canines gave an angularity to the arch, thus forming a semi-elliptical curve. In 6 per cent of cases the arch presents divergent limbs owing to the distance between the third molars being greater than that between the second. Last, in 4 per cent of individuals the lines

---

\*The third paper in a symposium on Primitive Man, held at the Academy, December 11, 1914.

of the premolars and molars are roughly parallel and the line formed by the incisors between the canines is only slightly curved. This is known as the hyperbolic curve.

The occlusion, or as it used to be termed, the articulation of the teeth of upper and lower jaws is described as an enharmsis, that is to say, the maxillary teeth overlap those of the mandible in front and at the sides. There are other varieties of occlusion where the teeth of both jaws meet exactly, prosharmsis, or where the lower teeth project, epharmsis, but these are less common.

The teeth do not occlude through their being placed exactly opposite to each other in the jaws, but interdigitate in consequence of the upper central incisors occluding with the smaller lower central and the mesial part of the lower lateral incisors.

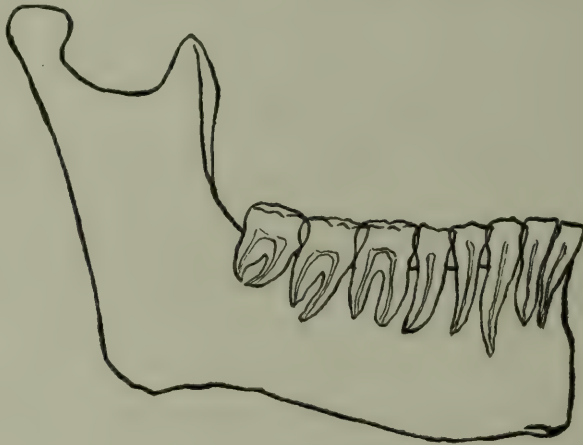


FIG. I.

Tracing of radiogram of right half of modern human mandible (male, adult, after Symington), one-half natural size.

Note the parallel nature of the roots of the molars, the reduction of the canine, the greater size of the second premolar over the first, and the small size of the pulp chamber.

The distance between the outer borders of the second molar teeth in the English race averages 58 m.m.; the length measured from a point between the upper central incisors to midway between the posterior borders of the third molars is 54 m.m.; the area of the hard palate is about 2,600 sq. m.m. The lower dental arcade has a length of 53 m.m., a breadth between the outer borders of the third molars of 68 m.m., and an area of 2,700 sq. m.m.

Concerning the teeth themselves, the neck presents a smaller diameter than the crown. The roots of the molar teeth are parallel, not divergent, and fused only in rare cases. The first maxillary premolar has two fused roots in 60 per cent of cases. In



the other 40 per cent one root alone occurs, save in very exceptional instances, where three roots are found. The second maxillary premolar has but one root in the majority of cases, but may possess two pulp canals and a bifurcated root-tip. The mandibular first premolar is a smaller tooth than the second premolar. It frequently presents two fused roots. The second mandibular premolar, as a rule, has a single root.

The crowns of the upper incisors do not present markedly diverging borders towards the cutting edge. The canines of both jaws are reduced so that their crowns project little if at all beyond those of the other teeth. As already mentioned, the second mandibular premolar is a larger tooth than the first. The crowns of all the maxillary molars show a tendency to revert to a tri-tubercular condition owing to frequent absence of the postero-internal cusp or hypocone. The third molar or wisdom tooth in the European is always smaller than the others. It presents very great variety in size, form and date of appearance. It may be very rudimentary or even absent. Hence it has been said to show evidence of modification in the direction of disappearance. But this must not be insisted upon, for the Eskimo frequently has his third molars small or crowded out, in spite of the primitive character of the rest of his teeth, and among the negro races, while in some cases the third molar may be small, in other

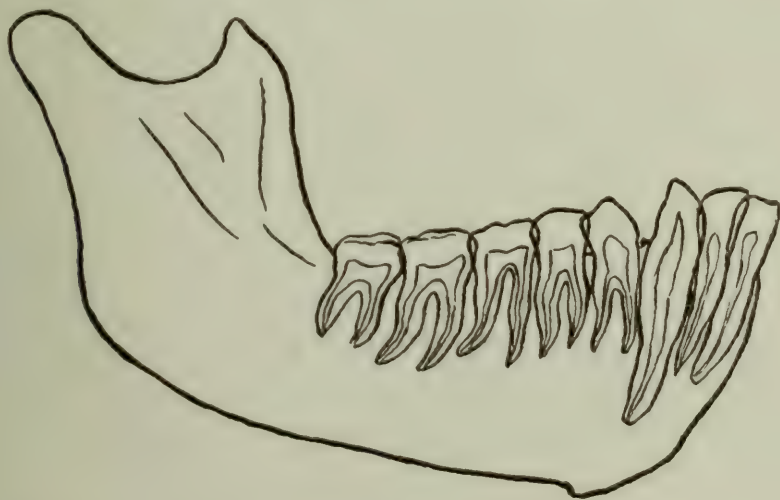


FIG II.

Tracing of radiogram of right half of mandible of adult orang, one-half natural size.

Compare this with Fig. 1, and observe the tendency to divergence in the roots of the molars, the large size of the canine, the double roots of the premolars and the large size of the pulp chambers. In the orang the roots of all the teeth are of great length.

instances not only is it large, but there may even be a fourth molar present. All the molars in *Homo* show a tendency to lose the square outline of their crowns and become rounded.

If one turn now to the teeth of the anthropoid apes, one observes first that the canines are veritable tusks, especially in the males. Indeed, all the teeth are large, and there is no tendency toward crowding, with the result that the dental arcades are longer than in man. In consequence of the large size of the canines, the jaws are squarish, the incisors lie in a straight line between the canines, and there is a distinct diastema or space between the maxillary lateral incisor and canine for the accommodation of the lower canine. The palate is much larger and longer than in man. Other differences from the modern human are the following: The premolars and molars lie in a straight line, those of the two sides converging somewhat as they pass backward. The premolars present the same number of roots as do the molars, namely, three in the upper jaw and two in the lower. They have crowns more pointed than is the case in man. In the gorilla the mandibular first premolar is larger than the second. The molar teeth in the anthropoids are squarer than in man, and



FIG. III.

Left side of skull of adult baboon, two-thirds natural size.

Although it is not an anthropoid, the baboon illustrates as well as the anthropoid the function of the canines in acting as dental guides.



their antero-posterior (mesio-distal) length is greater than the side to side (labio-lingual) diameter. Their cusps are sharper and longer. In the orang and gorilla the third molar is larger than the other two, and indeed in 60 per cent of orangs a fourth molar is present. In the chimpanzee the third molar, as in man, is smaller than the others. When one compares the roots of the molars of the anthropoid with those of *Homo*, one sees that they are divergent instead of being parallel. In the orang the roots of all teeth are of enormous length.

Now, consider for a moment the masticatory movements in the anthropoid and in modern European man. In the former, the canines, apart from their offensive and defensive functions, act as dental guides, locking the jaws when the teeth are occluded and prohibiting side-to-side movement. In modern man a somewhat similar result is obtained by different means. Owing to the enharmotic closure of the jaws, that is to say, the overlapping of the maxillary on the mandibular incisors, these teeth act as dental guides in place of the canines, which in their reduced condition are unable to accomplish such a result in man. Although side-to-side movements are not prohibited by this method of occlusion, they are considerably limited in extent. In prosharmotic human jaws, lateral movements are not limited.

Having now stated concerning the human anthropoid dentitions those facts which are of importance in the present connection, we may pass on to consider the features apparent in the teeth of primitive man.

Of races living at the present time, Melanesian, Australian and Eskimo peoples present the most primitive forms of teeth. In the incisors of the Negro, certainly, there is exhibited divergence of the lateral margins towards the cutting edge, a primitive feature resulting in a spatulate tooth. The crowns of all teeth are large in the Negro. But it is in this race that greatest variation occurs throughout the body. Australian and Melanesian skulls display incisors of this type. The prosharmotic variety of occlusion or edge to edge bite is found typically in the crania of Australians and Greenlanders. In them, therefore, there is no limitation of lateral movements. Another primitive race, the North American Indian, shows large size of the third molar. In certain inhabitants of New Guinea there is a small but distinct diastema between the lateral incisor and the canine of the

maxilla for the accommodation of the lower canine. But the Eskimo is of greatest use to us in linking up the teeth of modern races with those of paleolithic man. In the Eskimo the teeth are of large dimensions; the third molar is not smaller than the second; the necks of the teeth are not much reduced in diameter from the crowns, but the roots display the most distinctive character, for they are short and stout and show a marked tendency to fusion. In these less civilized races the palate tends to be short and wide, a condition one would anticipate from the possibility of unhampered lateral masticatory movements. In the modern European the enharmonic occlusion has led to narrowing and lengthening of the palate.

The first paleolithic teeth to which our attention is directed are those of *Homo Breladensis*, the palaeolithic man, or more possibly woman of Jersey. No skeletal remains of the individual were found, but thirteen teeth of the permanent dentition were removed from the floor of a cave on St. Brelade's Bay, together with flint implements of the Mousterian Culture and bones and teeth of the reindeer and the so-called woolly rhinoceros. Both implements and mammalian remains refer the period during which the individual lived to the latter part of the Pleistocene or Glacial era. Only the apices of the cusps of these teeth had been worn away, so that presumably the owner was not an old person.



FIG. IV.

Tracings from radiograms of the second mandibular molar tooth of Jersey man (A), one of the Krapina man (B), and Heidelberg man (C), one-half natural size.

Note the fusion of the roots and the large amount of secondary dentine diminishing the size of the pulp chamber in Jersey man. Some of the Krapina teeth show more fusion of roots than is exemplified in the specimen presented. The pulp chamber in the Krapina teeth is larger than that of the teeth in Heidelberg man. In all three cases the pulp chamber is of greater extent than is the case in modern man.

When the teeth are placed in their probable relative positions, Keith has determined that the hard palate would be 50 m.m. in antero-posterior length and 68 m.m. in breadth between the outer borders of the second molar teeth. The maxillary arcade must have been horse-shoe-shaped, and while in its length it is about the same as in modern man, in its lateral diameter its area



greatly exceeded his. The lower dental arcade was 55 m.m. long, 70 m.m. broad and had an area of 3,200 sq. m.m. The grinding surface of the lower molars must have exceeded that area in the case of modern man by some 10 m.m., as in the case of the Heidelberg jaw shortly to be mentioned. On examination of the individual teeth, it is seen that the necks are but slightly less in diameter than the crowns, which are distinctly squarer in the case of the molars than in modern man. But the most outstanding feature is the short, stout character of the roots (most of which have lost their tips), and the fusion of the roots in those teeth which possess more than one. The canine, indeed, shows much more than the lateral grooving so often seen in ourselves, for its root is almost subdivided, though the radiogram makes it certain that only one pulp canal is present. The left maxillary second premolar has two fused roots, the left mandibular first premolar shows evidence of three fused roots, while the second premolar next it is very much reduced in size, and had only a single grooved root.

In respect of the relations between the first and the second mandibular molars, this individual resembled the gorilla, but the dimensions of the teeth leave no doubt of its human character. The teeth, however, differ from those both of modern man and of the anthropoids in the marked fusion of the short, stout roots.

The radiogram shows the pulp cavities to be partially filled with secondary dentine, a condition which appears with age and wear of the teeth. But these teeth show little wear, and may have been those of a young individual. It may be that the occurrence of secondary dentine in this specimen is associated with the great increase in cementum, which has caused fusion of the roots.

Now let us glance for a moment at the teeth of Heidelberg man. They are of about the same dimensions as those of the Jersey example, that is to say, they present no marked difference in their crowns, whether in shape or size or cuspidation, from teeth of modern living men. The length of the arcade is, however, 60 m.m., the breadth 72 m.m., and the area 3,470 sq. m.m., which measurements are greatly in advance of the corresponding ones in modern man. The mandible has many anthropoid features and, as in Jersey man, the first premolar is much larger than the second. Nevertheless, the dimensions of the

teeth and their characters are distinctly human. The Heidelberg jaw was found in the same deposit with eoliths and with bones of *Rhinoceros etruscus*. These accompanying specimens indicate the area in which Heidelberg man lived to be older than that of the deposit of St. Brelade's Bay. Moreover, although the teeth of Heidelberg man are more worn, less secondary dentine is present in them than in those of the Jersey example. The roots of the teeth show a similar, though not so marked, fusion.

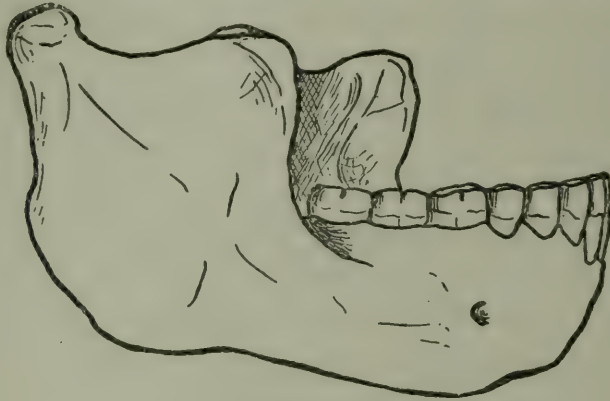


FIG. V.

Right side of Heidelberg (Mauer) mandible, one-half natural size.

Note the extensive dental arcade, the reduced canine and first premolar, the large size of the third molar, and the absence of a "waist" at the neck of the teeth.

The year before the Heidelberg jaw came to light, Professor Gorjanovic-Kramberger described a number of teeth which, with fragments of human bones and those of the broad-nosed rhinoceros (*R. megarhinus*), were found near Krapina in Croatia. The extinct mammal suggests that the Krapina relics are older than those of St. Brelade's Bay, but not so old as the Heidelberg jaw. Some of the teeth are bigger than those of Heidelberg man, and although they do not display secondary dentine, as do those of St. Brelade's Bay, yet many of the molars have roots fused throughout their whole extent. Other features of the Krapina teeth are the following: The canines are reduced and have short roots which do not project sufficiently to produce a caniniform fossa on the maxilla. The canines, moreover, display a certain curvature. The second maxillary premolar displays two roots.

All teeth so far mentioned have certainly belonged to species of man now extinct, known as *Homo primigenius* or *neandertalensis*, of which Heidelberg man was probably a forerunner, and it is to be observed that they could not possibly be mistaken for those of modern man or of anthropoids. According



to certain investigators, Heidelberg man lived during the first interglacial period, Krapina man during the second. If we are to accept the most careful estimates for the associated implements and remains, we must place Jersey man in the last interglacial phase or even during the fourth glaciation.

The specific features which we have discerned in *Homo primigenius* are then that his teeth differ from ours not in size or shape or cuspidation, but in the method of fixation in the jaws, the prosharmonic occlusion and the greater dimensions of the dental arcades. It may be inferred with some assurance that all these are related and are connected with a method of mastication in which lateral movements were unhampered. We find confirmation of this hypothesis in the formation of his jaws and in our scanty evidence, through the presence of seeds in occasional skeletons and in primitive stone instruments for grinding corn, of the gritty nature of his food.

Leaving out of account, for lack of space, the teeth of the probable ancestors of modern man, which do not offer such marked differences from our own, we pass to consider other teeth which are not quite so easy to place, but the first of which probably belonged to a variety of *Homo* who possessed teeth very similar in some respects to the recently discovered *Eoanthropus*.

At Taubach in Saxe-Weimar two teeth were discovered along with bones of the straight-tusked elephant (*E. antiquus*) and the broad-nosed rhinoceros (*R. Merckii* or *megarhinus*), and described in 1895. The associated mammalian remains refer the geological horizon to the earlier half of the Pleistocene. The teeth are as old as those of Krapina, though probably not so old as the jaw of Heidelberg. The left first mandibular milk molar and the same tooth in the permanent dentition were found. Of these the latter presents no marked difference from modern teeth in its size and number of cusps. It has two stout roots parallel in direction and partially fused. In these particulars it is similar to teeth of *Homo primigenius*. Its crown is so long (mesio-distally) and so narrow (labio-lingually), however, that in this respect it is almost simian in type, and is indeed the tooth most nearly approaching the simian among those found in Europe.

The next teeth to receive notice were discovered in Java along with a skull-cap and a femur belonging to a creature to which the name *Pithecanthropus* has been given. The teeth are the maxillary second left and third right molars and the mandibular second premolar. They are too small to harmonize with the skull-cap, if it is that of an ape, and somewhat too large, if it is that of a human being. But we shall confine our attention to the teeth alone. The only anthropoid of sufficient size to have possessed the teeth, and now living in that region of the world, is the orang, but as he possesses exceptionally long roots to his teeth, this ape is at once disqualified from ownership. Otherwise the small neck and divergent unfused roots of the teeth correspond to the anthropoid dentition. The greater diameter of the crowns, which are rounded, is, however, in the labio-lingual direction. These features approximate to the human type, and the short, stout roots resemble those of the primitive *Homo primigenius*. The teeth resemble the anthropoid dentition in certain features and the human in others. Yet they are not exactly like any teeth, for they have short, bulky crowns, the masticating surface of which is not nearly so great as the largest diameter of the crown itself. We must, therefore, regard the zoological position of these teeth as inconclusive. They appear to represent a stage between the anthropoid and man. From associated mammalian remains, *Pithecanthropus* probably lived at the commencement of the Pleistocene and is therefore older than Heidelberg man.

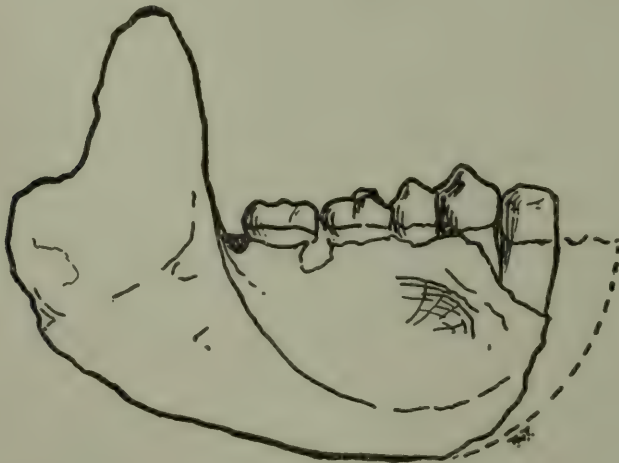


FIG. VI.

Fragment of the right side of the mandible of *Dryopithecus*,  
two-thirds natural size.

Note the large canine, the greater size of the first premolar over the second, and the anthropoid-like first and second molars.



Is it possible to go further back in this effort to trace our ancestral line by its teeth? If no human remains have been found of date earlier than those already mentioned, what animal was responsible for the eoliths of the Pliocene and the Miocene periods, always supposing these eoliths to be purposely chipped and not simply nature's artefacts? In a previous number of this journal (*Our Primate Ancestors*, April, 1914), I discussed the characters of *Dryopithecus*, an extinct anthropoid which lived in France during the Miocene period. While he resembled the gorilla in the large size of his first mandibular premolar, he shared this feature in common with Heidelberg man and Jersey woman. But his teeth and jaws are by nature anthropoid, save in this and in the fact that his canines were not markedly prominent. We have been told that the gorilla uses a broken bough as a weapon, and that the chimpanzee bangs with a stick on a log at the pow-wows he attends, and it may be that a form like *Dryopithecus* could understand sufficient to enable him rudely to chip flints into implements.



FIG. VII.

Left side of the mandible of *Propithecus*, natural size.

Observe the vertical position of the incisors, the reduced canine, the short perpendicular premolars, and the anthropoid-like molars.

One last thought arises in our mind in connection with teeth. When did the distinctively human dentition appear in the world's history, the reduction in size of the canines and vertical position of the incisors? For this we must go back to the Oligocene, a period so remote that we can barely conceive its distance from us now. There lived, then, an animal, *Propithecus* by name, in which our human teeth are certainly foreshadowed. But this is long before our present anthropoids, or even *Dryopithecus*, so

long extinct, became specialized, and countless ages before man, as we have seen him in his earliest form, appeared upon the face of the globe.

So much we learn from teeth, little and insignificant in themselves yet big with meaning, the most imperishable fragments of our mortal frame. We may reflect, as did the illustrious old physician, Sir Thomas Browne: "Time which antiquates antiquities, and hath an art to make dust of all things, hath yet spared these minor monuments."

---

**The Emotions and Alimentation.**—To experimental physiologists it is now a familiar fact that the peristaltic movements of the alimentary tract are easily inhibited by a variety of influences that may come into play in the every-day life of the human subject as well as the laboratory animal on which they have primarily been noted. The effects of the emotions on gastric peristalsis is not a new observation. Cannon, who has used the Roentgen ray, the most fruitful of all the technics applied in this field of study, long ago showed that rage, fright and anxiety abolish movements of the stomach. Other sensory stimuli bring about similar inhibitions of gastric peristalsis which can actually be observed in certain animals (rabbits) without any operative interference whatever, by mere inspection of the epigastrium as described by Auer. The stoppage of intestinal peristalsis after similar inhibitory influences are brought to bear has been described for the human subject by various observers who used the Roentgen-ray method. If further evidence were needed to give emphasis to the profound dependence of the activity of the stomach, as regards both its secretory and motor functions, on the "condition" of the nervous system, additional proofs could easily be adduced. Quite recently a large number of facts have been gathered in the Pharmacologic Institute at Utrecht directly applicable to the question at issue. They involve a careful record of the rate of discharge of bismuth meals from the stomachs of laboratory animals in various stages of psychic calmness or perturbation, but under otherwise comparable conditions. Without attempting to group the emotional states into well-defined categories, we may describe the subjects as ranging from individuals tame, unperturbed, readily amenable to handling and freely submissive to observation, on the one hand, to wild or frightened or refractory subjects at the other extreme. Corresponding with these emotional states the discharge of the meal from the stomach ranged in time from one and a half hours in the former group to three or even more hours in the case of the most unamenable subjects. Such figures are more expressive than a dozen sermons of the importance of a proper state of the nervous system in the normal performance of some of the functions of alimentation.—*Journal American Medical Association.*



## EDWARD JENNER\*

By RICHARD DEXTER, M. D., Cleveland

Edward Jenner was born at Berkeley in Gloucestershire, England, on the 17th of May, 1749. His father was a vicar of the Anglican Church, and young Jenner was early put to school to good masters. His schooling must have been of short duration, for at the age of 13 he was apprenticed to Mr. Daniel Ludlow, of Sodbury, with whom he began his medical studies. As a boy he evinced great interest in natural history, preferring the study of the ways of animals or of the geological formation of the country round about his home, to the ordinary games of boys of his own age.

After he had served his apprenticeship to Mr. Ludlow, Jenner went to London and was entered as a student at St. George's Hospital. In 1770 he entered the household of the great John Hunter in the capacity of house pupil. Hunter's personality and his great interest in natural history, as well as in things medical, had a strong appeal to Jenner, whose interests lay along much the same lines, so that Jenner soon became Hunter's favorite pupil. This kindly relationship developed into a great and lasting friendship between the two men.

During Jenner's apprenticeship to Mr. Ludlow, a young girl had applied for medical advice, and in the course of the conversation some mention of small-pox was made. The patient then vouchsafed the information that as she had had the cow-pox she could not take the small-pox. While he was a student of Hunter's, Jenner told his master of this incident. Hunter did not seem to take much stock in the story, but gave the following piece of advice to his pupil, "Do not think, but try. Be patient; be accurate." Jenner took this excellent advice and quietly went about his studies and his work, never forgetting that some possible relation existed between the cow-pox and the small-pox, which might be of value in warding off that terrible scourge from the human race.

Jenner was an excellent student, and was famous for the "neatness and precision" of his preparations in anatomy and natural history. On account of his ability along these lines, Jenner was given the opportunity to prepare and arrange the collection of specimens brought home by Captain Cook from his

---

\*Read before the Sigma Chapter of Nu Sigma Nu, November, 1914.

first voyage, in 1771. So well did he perform his task that he was urged to accept the post of naturalist to Cook's next expedition. Jenner, however, desired to practice his profession in England, and to this end he returned to Gloucestershire and took up the life of a country surgeon, riding hither and yon over the countryside, tending the sick, at all times and in all weathers.

Probably the most dreaded disease with which Jenner would have to deal was small-pox, which at this time was a veritable scourge the world over. It has been estimated that in the middle of the eighteenth century every tenth death was due to small-pox, and that one-fourth of all the people were either maimed or marred by it. So common was the disease that there was a proverb which said that "From love and small-pox none remain free." In 1721, that exceedingly brilliant and masculine-minded individual, Lady Mary Wortley Montague, had introduced into England the practice of inoculation against the small-pox. This procedure had been in use in the East for centuries, and on her return from Constantinople, Lady Mary brought the practice with her. Inoculation consisted in artificially infecting people with matter from a small-pox pustule, preferably from a patient who was undergoing a "heavy burthen" of the disease. This frequently caused a lighter attack than when the small-pox was taken in the ordinary way and the practice spread with great rapidity, although the preparation for the inoculation must have been almost as bad as the disease itself. Jenner says this preparation consisted in "bleeding till the blood was thin, purging till the body was wasted to a skeleton, and starving on a vegetable diet to keep it so." It can be readily seen, however, that while the individual cases might be less severe, the tendency from this practice was to actually spread the disease. Therefore, when Jenner started to practice medicine, small-pox, with its trail of death and disfigurement, was far commoner than any one disease that we have to deal with nowadays. The casual remark of the young girl, made in his earliest student days, must have recurred again and again to Jenner, ever bringing up the question, "Can cow-pox protect against the small-pox?"

The country round about Berkeley, where Jenner lived, was given up largely to grazing and farming. There were many dairies in the neighborhood. At times epidemics of a disease known as the cow-pox would infect whole herds of cattle. The



cow-pox was characterized by pustules which appeared usually on the udders of the cows. The milk-maids and dairy-men, who milked the cattle infected with this disease, invariably developed pustular sores on their hands, similar in all respects to the sores on the udders. Throughout the countryside it was a common belief that those individuals who contracted the cow-pox in this way could not take the small-pox, and, in fact, they were frequently in demand as nurses to those suffering from the small-pox. We can readily imagine that Jenner, in his rounds from farm to farm, should hear of this belief and that it would further excite his interest, and fire his imagination "to try, to be patient, and to be accurate" in the search for the truth in a matter so astonishing and so suggestive.

Slowly, by inquiry in regard to the truth of the matter, by hunting up the dairy-workers who had been infected with cow-pox and interviewing them, and later by actual observation, Jenner began to see that infection with the cow-pox did actually protect against the small-pox. The subject was ever in his mind, so much so, in fact, that early in his career he was threatened with expulsion from a local medical society if he did not cease harassing the members on the subject of the relation between cow-pox and small-pox, which his worthy colleagues considered nothing less than a myth. After this experience, Jenner kept his own counsel, and went about his work day by day, looking for further proofs of his great theory. As I have said, inoculation with small-pox virus was a very common practice, and Jenner was frequently called to inoculate whole households with matter from a favorable case of small-pox. He noticed that those individuals who had undergone an infection with the cow-pox, resisted the inoculation with the small-pox matter, while those who had not had the cow-pox underwent the disease in the usual way. Still, he was remarkably cautious in announcing the results of his observations, and it was not until 1780 that he fully described his ideas on the protective properties of the cow-pox infection. This he did in a letter to his friend Edward Gardner. The letter ends with the following significant statement: "I have entrusted a most important matter to you, which I firmly believe will prove essential to the human race. I know you, and should not wish that what I have stated be brought into conversation; for should anything untoward turn up in my experiments, I should be made, particularly by my medical brethren, the subject of ridicule—for I am the mark they all shoot at."

On the 14th of May, 1796, Jenner inoculated matter from the hand of a dairy-maid, Sarah Helmes, who was infected from her master's cows, into the arm of James Phipps, a healthy eight year-old boy. A pustule, similar in every way to the sore on the dairy-maid's hand, developed after seven days. The development of the pustule was accompanied by slight constitutional symptoms, which were of short duration. The pustule then scabbed and healed. On the first of July the boy was inoculated with matter from a case of small-pox, without any effect whatsoever. This experiment proved to Jenner's satisfaction that infection with the cow-pox was an absolute safeguard against small-pox, but he still was unwilling to announce his proofs to the world. In 1798 he inoculated three other children, one of whom was his own son, with cow-pox, and later attempted to infect them with true small-pox, but, to his great satisfaction, they all resisted the disease absolutely.

Later, in 1798, Jenner published the "Inquiry Into the Causes and Effects of the Variolae Vaccinae, or Cow-pox." The pamphlet was dedicated to his friend, "C. H. Parey, M. D., at Bath." In this he sets forth the results of his observations and experiments on the protective action of cow-pox. It is a peculiarly discursive document, not at all in accord with our modern ideas of scientific accuracy. Jenner's theory that the cow-pox originated in a disease occurring on the heels of the horse, known as the "grese," is, of course without foundation in fact. Jenner stuck to this theory with the utmost tenacity for many years. Still, wandering as his theoretical discussion is, and slipshod, according to present day standards, as are the case histories and the accounts of his experiments, the proof of his great discovery is there for all to see.

Shortly after the publication of the Inquiry, Jenner traveled to London, much against his will, it may be said, and found a very cold reception for his new ideas. No one would give this new protective method a trial. Finally, one Doctor Cline did inoculate a child with cow-pox, and after repeated unsuccessful attempts to infect the child with small-pox, became an enthusiastic convert to the new method. Indeed, Cline became so enthusiastic a believer in the future of vaccination that he urged Jenner to give up his practice in the country and to move to London, where he assured Jenner of an income of at least 10,000 pounds a year. Jenner's answer to Cline is characteristic. He wrote,



"Shall I, who even in the morning of my days sought the lowly and sequestered paths of life, the valley, not the mountain; shall I, now my evening is fast approaching, hold myself up for an object for fortune and for fame? Admitting it as a certainty that I obtain both, what stock should I add to my little fund of happiness? My fortune, with what flows in from my profession, is sufficient to gratify my wishes; indeed, so limited is my ambition, and that of my nearest connections, that were I precluded from future practice I should be enabled to obtain all I want. And as for fame, what is it? A gilded ball, forever pierced with the arrows of malignancy."

Despite his unwillingness to leave his beloved Gloucestershire, Jenner did eventually move to London, but only lived there a short while, as he found that the expenses of a London establishment were too great a burden. So he returned to Berkeley, and took up again his duties as a country practitioner.

However, the practice of vaccination was yearly gaining ground, and Jenner was soon immersed in a voluminous correspondence. The mere answering of letters of inquiry relating to his discovery kept him so busy that he used to refer to himself as the "Vaccine Clerk of the World." While the practice of vaccination was growing in London, and in other parts of the world, Jenner himself was besieged by people who desired to be vaccinated. The poor he vaccinated free, and had a little pavilion in his garden which he whimsically named the "Temple of Vaccinia," where he saw his patients. All this letter writing, query answering, consulting and vaccinating, left him no time for the practice of his profession, so that during the period from the announcement of his discovery in 1798 to 1802, it is said that Jenner became almost a poor man. In this year, however, Parliament voted him a grant of 10,000 pounds, which relieved him from his financial difficulties. In 1807 further recognition of his great services was made, when Parliament again voted him a sum of 20,000 pounds.

The acceptance of vaccination as a preventative for small-pox did not come too easily, however. As is usual with new discoveries, the conservative, the fearsome and the jealous all had their fling at the practice. The caricaturists of the period brought out a number of the most astonishing pictures of the results of vaccination. They were pleased to portray people with cows' heads and cows' tails, twisting in the agony and shame of

their condition. Those who had made their living out of the direct inoculation for the small-pox saw their livelihood slipping from them, and numerous pamphlets were issued, describing the direful effects of vaccination. One of these worthies, Doctor Rowley, published a tract wherein he described a boy who had acquired the horns and the face of a cow, as the result of being vaccinated. The clergy also attacked the practice. Some members went so far as to announce that as small-pox was a scourge designated by the Almighty for the eventual good of the human race, therefore, any check to the spread of the disease was nothing less than sacrilege.

As is true with all new methods of this sort, its early practice, by the precipitate or ill-informed in the profession, resulted either in disaster or in a lack of success. Many cases were vaccinated, and then inoculated with small-pox virus a few days after the vaccination; when these cases came down with small-pox, there was, of course, a cry that the vaccination had given no protection. Despite all this ridicule and misinterpretation, the practice of vaccination spread steadily throughout the world.

In 1799, and again in 1800, Jenner published the results of his further observations on vaccination. His instructions as to the method of scarification of the skin, and of the preparation of the vaccine are extremely modern, as are also his insistence on cleanliness and the use of mercurial preparations to stop the spread of any infection other than that of the virus itself. As is often the case, Jenner's work was taken up much more quickly abroad than at home. Both in France and in Germany, the practice spread more rapidly than in England, and both of these countries were quicker to recognize the value of his work and more ready to render him the honor and glory which was his due.

On the 26th of January, 1823, full of honors and of years, Jenner died of apoplexy. During the latter part of his life honorary degrees, honorary offices, memberships in learned societies, memorials and gifts were showered upon him. Among the most extraordinary of these was the act of the Empress Dowager of Russia. This august lady not only sent Jenner a testimonial letter and a diamond ring in recognition of his services to mankind, but also caused the first child vaccinated in Russia to be named "Vaccinoff." and settled a life pension on this historic infant.



What manner of man was this Edward Jenner, who, by virtue of his observation and experiments, was able to almost banish from the earth one of the most fearful diseases of all times? Edward Gardner, one of Jenner's most intimate friends, describes him as follows: "His height was under the middle size, his person was robust, but active and well formed. In his dress he was peculiarly neat, and everything about him showed the man intent and serious and well prepared to meet the duties of his calling. When first I saw him it was on Frampton Green. I was somewhat his junior in years, and had heard so much of Mr. Jenner of Berkeley that I had no small curiosity to see him. He was dressed in a blue coat and yellow buttons, buckskins, well polished jockey boots, with handsome silver spurs, and he carried a smart whip with a silver handle. His hair, after the fashion of the times, was done up in a club, and he wore a broad-brimmed hat."

The numerous pictures of Jenner show him as a stocky, kindly-faced man. The mouth and chin are firm, the forehead is high and fine. There is a quiet but determined expression that suggests modesty and great firmness, the kind of man one would like for a friend or for a physician.

Not only was Jenner a physician and a busy one, but he found time to keep up his collections of natural history specimens and to write many articles on these subjects. He was very fond of music, and wrote excellent poetry. His poems usually dealt with some phase of country life, of which he was so fond.

Jenner's ability to observe was highly developed. It is interesting to note that he was the first man to associate calcification or thickening of the coronary arteries with angina pectoris. His description of the way in which his attention was drawn to this association is worth quoting. He says: "Another case (of angina pectoris) fell under my care. In that, after having examined the more important parts of the heart without finding anything by means of which I could account either for his sudden death or for the symptoms preceding it, I was making a transverse section of the heart pretty near its base when my knife struck something so hard and gritty as to notch it. I well remember looking up to the ceiling, which was old and crumbling, conceiving that some plaster had fallen down. But, on further scrutiny, the real cause appeared; the coronaries were become bony canals. Then I began a little to suspect. Soon after Mr.

Paytherus met me with a case. Previous to our examination of the body, I offered to wager him that we should find the coronary arteries ossified. This, however, proved not to be exactly true; but the coats of the arteries were hard and a sort of cartilaginous canal was formed within the cavity of the artery, and there attached, so, however, as to be separable as easily as the finger from a tight glove. We then concluded that mal-organization of these vessels was the cause of the disease. At this very time, my valued friend, Mr. John Hunter, began to have symptoms of angina pectoris too strongly marked upon him; and this circumstance prevented any publication of my ideas on the subject, as it must have brought on an unpleasant conference between Mr. Hunter and me. I mentioned both to Mr. Cline and Mr. Home my notions of the matter at one of Mr. Hunter's Sunday night meetings, but they did not seem to think much of them. When, however, Mr. Hunter died, Mr. Home very candidly wrote me immediately after the dissection to tell me I was right."

This account of his observations as to the cause of angina pectoris is only another instance of Jenner's ability to see clearly, and to correlate facts, which eventually led him to the discovery of the efficacy of vaccination.

I like to think of Jenner in his blue coat, buckskin breeches and polished jockey boots, riding his rounds through the country about Berkeley. I like to think of the love and respect in which he was held in all the countryside. Fearing ridicule, he kept his own counsel until he knew the truth of his great discovery, and then quietly and unostentatiously he gave it to the world. Fame and honors came to him unasked, but before he died he had the great reward of knowing that, by his endeavors, hundreds and thousands of lives were being saved yearly. Poet, scholar, physician and gentleman, he did his work for the love of it, and won everlasting fame.

#### References

- I. Medical Portrait Gallery. Thomas Joseph Pettigrew. 1840, 1.
- II. Life of Edward Jenner. Brown. London.
- III. Edward Jenner, His Life, His Work, His Writings. *Brit. Med. Jour.* 1902, II, 1.
- IV. The Works of Edward Jenner and Their Value in the Modern Study of Small-pox. George Dock. *New York Med. Jour.* No. 22, p. 926. No. 23, p. 978.
- V. 1. "An Inquiry Into the Causes and Effects of the Variolae Vaccinae or Cow-pox."  
 2. "Further Observations on the Variolae Vaccinae or Cow-pox."  
 3. "A Continuation of Facts and Observations Relative to the Variolae Vaccinae." Edward Jenner. Reprinted in the *Harvard Classics*, Vol. 38, pp. 150-231.



## ON THE PRESENCE IN GUINEA PIG'S BLOOD OF A NATURAL ANTI-SHEEP HEMOLYSIN

By HAROLD N. COLE, Ph. B., M. D., from the Departments of Dermatology and Syphilis and of Pathology of the Western Reserve University and of the Lakeside Hospital, Cleveland, Ohio.

As Neisser<sup>1</sup> mentions, Ehrlich has long advocated the multiplicity of antibodies in normal serum; though it has been disputed by Bordet and Buchner. Thus, Ehrlich and Morgenroth<sup>2</sup> demonstrated the presence of several distinct hemolysins in a normal serum and were able to isolate them. Again, several observers have called attention to the presence of normal diphtheria antitoxin in the blood of horses and man, while Landsteiner has found anti-tryptic substances in normal rabbit, guinea pig and ox serum. So the remarkable thing about this report is not the fact of having several times observed an anti-sheep amboceptor in the blood of normal guinea pigs, but rather the fact that more stress has not already been laid on this by others. Undoubtedly other workers have observed it, but the writer has found no especial mention of it in the literature, nor in some of the standard books of the day, on the Wassermann reaction, e. g., in those of Boas<sup>3</sup>, of Noguchi<sup>4</sup>, of Browning and McKenzie<sup>5</sup>, et cetera. As it is a very important item in the preparation of a careful Wassermann reaction, it has been thought worth while to make this brief report for the benefit of other workers. The method of its detection will first be described, then the effect of this natural hemolysin on the Wassermann reaction, and, lastly, the manner of its removal.

Using the following method, the anti-sheep amboceptor has been observed six times in some three hundred guinea pigs. As the animals were generally killed in pairs, it was impossible to say whether one or both of the pigs in a pair were affected, as, of course, the sera were pooled immediately after separation from the clot. The writer merely employs two tubes, A and B, into the first of which (A) is put 1.0 c.c. of 0.85 per cent NaCl, 1.0 c.c. of 10 per cent guinea pig's serum, to be tested, and 1.0 c.c. of 5 per cent sheep's red blood cells. Neither tube should show any hemolysis after 30 minutes in the incubator at 37.5 degrees C. We can readily understand this, as normally there is no middle piece or amboceptor present to link up with the sheeps' red cells and join itself by its complementophile end to the complement. However, if there be an anti-sheep amboceptor

present, as we have noted six times in our work, then hemolysis will result, for the red cell will be linked up to the amboceptor or middle piece by the cytophile group of the latter, enabling the haptophore group of the complement to connect up with the complementophile group of the amboceptor. The toxophore group of the complement would then cause the destruction of the red cells and there would be a greater or lesser degree of hemolysis, according to the amount of anti-sheep hemolysin present. For example, in the preliminary titrations of the Wassermann reaction for November 14th, 1914, using the pooled serum from two guinea pigs, there was an anti-sheep hemolysin of such strength present that both control tubes A and B were hemolyzed in the requisite 30 minutes, and on titration an anti-sheep amboceptor was found, of such a strength that 1.0 c.c. would hemolyze 100.0 c.c. of 5 per cent sheeps' red blood cells.

It may then be asked what would be the effect on the Wassermann reaction. Provided a person were to work with such a complement, the result of the Wassermann reaction would be worthless despite even the most careful preliminary titrations. In the first stage of the reaction a portion of the complement would undoubtedly be linked up with the amboceptor—thus leaving an insufficient supply for the antigen and so-called "Reagin," as Lesser would call the reacting substance in a syphilitic serum, and all positives would be reported as negatives. Quoting Ehrlich<sup>2</sup> in this connection: "The original assumption, that amboceptor and complement (at least in the case of hemolysins) exist free side by side, and that the complement does not take part in the reaction until the amboceptor has been bound by the cell (owing to an increase in the affinity of the complementophile group), this assumption has not proven tenable in every case." It is unlikely that any negatives would be reported as positives, but nevertheless one can see what grave consequences might ensue.

As to the method of eradicating this anti-sheep hemolysin in guinea pigs' blood, Ehrlich and Morgenroth<sup>3</sup> have already suggested a means in their work on lysins, and likewise McKenzie and Browning<sup>4</sup>, using beef cells in the hemolytic system for the Wassermann reaction—where they found an anti-beef hemolysin occasionally in guinea pigs' blood. As has been long known, complement is thermolabile, destroyed by heat at 60 degrees C for 30 minutes and inactive at 0 degree C, while the



amboceptor or middle piece is thermostabile and active at 0 degree C. Therefore, all that is necessary is to mix the guinea pig serum, containing the anti-sheep hemolysin, with a corresponding amount of washed sheep's red cells and allow them to stand at 0 degree C for one hour. It is well to cool each separately before mixing them. By this means the anti-sheep amboceptor is taken up by the red cells and on centrifuging one can pipette off the supernatant complement which is then ready to be used after titration. For example, with the complement of November 14, 1914, already mentioned, after the above procedure it worked very nicely, while the sheep's red cells after washing and the addition of a little complement hemolyzed very quickly—thus showing that the amboceptor had been extracted at 0 degree C and was firmly bound to the cells.

To summarize: The blood of the guinea pig occasionally contains a normal anti-sheep amboceptor which can be detected by control tubes A and B containing saline, 5 per cent sheep's red blood cells and 10 per cent guinea pig's serum, to be tested, in suitable amounts. If after incubation for 30 minutes at 37.5 degrees C these tubes show any hemolysis then a certain amount of this immune body is present and unless removed will cause practically all of the sera to be tested to be returned negative to the Wassermann test. As complement is thermolabile and inactive at low temperatures, while amboceptor is thermostabile and active at 0 degree C it is possible to get rid of the anti-sheep hemolysin, present in the guinea pig serum, by mixing it with washed sheep's red blood cells and allowing them to stand one hour at 0 degree C. After centrifuging, the complement is then ready to be used for the reaction. As a means of lessening the action of this troublesome anti-body, the writer would advise the use of pooled sera from several pigs.

1. Neisser, Max: *Deutsch. med. Wochenschr.*, No. 49, 1900. *Studies in Immunity*, Paul Ehrlich, translated by Charles Bolduan, p. 587. John Wiley & Sons, N. Y., 1900.
2. Ehrlich, Paul: "General Review of the Recent Works in Immunity." *Idem.*, p. 577; Extract, p. 580.
3. Ehrlich, Paul, and Morgenroth, J.: *Berl. Klin. Wochenschr.*, 1899, No. 1, and *Idem.*, p. 1.
4. Browning, C. H., and McKenzie, I.: "Recent Methods in the Diagnosis and Treatment of Syphilis." Lea & Febiger, Phila. and New York, 1913, p. 5.
5. Boas, Harald: *Die Wassermannsche Reaktion*. S. Karger, Berlin, 1911.
6. Noguchi, H.: *Serum Diagnosis of Syphilis*. Lippincott & Co., Phila., 1910.

## THE OHIO PUBLIC HEALTH FEDERATION

By WALDO M. BOWMAN, President of the Ohio State Pharmaceutical Association, Toledo, Ohio

It is well said that all regulations for the government of a community must arise from the needs of the citizens at large, that all laws are fundamentally for the protection of the people, and such as have for their sole aim the benefiting of any special class are fundamentally at fault.

So we should remember that the various laws relating to the health of the community have as their original purpose the good of the people; that the restriction of the practice of medicine to competent physicians; of pharmacy to qualified pharmacists, are basically not for the protection of physicians and pharmacists, but of the people against the incompetent in these professions.

These facts are very often overlooked by the public, with whom the tendency is to view the Medical and Pharmaceutical Practice Acts as strictly class legislation; they are unfortunately at times forgotten by ourselves, and we may justly be accused of having introduced and supported measures that were entirely selfish. The pharmaceutical interests have overlooked their duty to the community, and have taken no interest in public health matters, but have played politics within their own organization and outside, until today we have the anomalous condition of pharmacy laws enforced by the Agricultural Commission, while in the public mind has been engendered a feeling of distrust that reflects but poorly on our interest in the public welfare.

That the existence of this condition was to a great extent due to a lack of understanding and co-operation has long been apparent; and in order to overcome, as far as possible, the lack of harmony among the various organizations and societies in the State of Ohio whose field of work or business lay along lines relative to the conservation and protection of the health of the community, a meeting was called in Columbus on the third of September last, at which were present representatives of the Ohio Medical Association, the Ohio Dental Association, the Ohio Pharmaceutical Association, the Ohio Society for the Prevention of Tuberculosis, the Ohio State Board of Health, and the Ohio Commission for the Blind. Existing conditions were considered, and, after thorough discussion, measures were de-



cided upon which it was expected would pave the way for a volunteer organization that might serve to harmonize the various public health interests and work for the ultimate good of the community at large.

On the 24th of September, three weeks later, other organizations having been advised of the plan, another meeting was held, at which the original six bodies were represented, together with representatives of the Ohio Eclectic Medical Association, the Ohio Homeopathic Association, Ohio Board of Pharmacy, Ohio Veterinarians Association, Ohio Dental Board (the State Commissioner of Schools was invited to be represented, but failed to comply). At this meeting a definite organization was effected, known as the OHIO PUBLIC HEALTH FEDERATION, to be represented by a Central Committee with offices at Columbus, and composed of one representative from each of the affiliated bodies, they representing some 8,300 members.

A method was worked out at this and later meetings by which it will be possible to keep in touch with all proposed legislation that may be introduced, and to notify the Central Committee of such as might need their attention, also to collect facts and data that might be of service to the members of the Federation. It should be distinctly understood that the Federation is in no sense a political affair; it supports no clique nor party, supports no paid lobby, but serves as a volunteer guard against objectionable measures.

It is purposed that the Federation as a body give its endorsement only to such proposed measures as may be unanimously endorsed by the Central Committee, and that each organization having bills that it wishes to have introduced, submit them first to the Federation for examination and comment, as in this way it is believed most points of friction may be eliminated in the final draft of proposed measures.

The expense necessary to the maintainance of the office and committee is to be met by a pro-rata contribution from the various independent members (State Boards having no part in this feature).

It was agreed that all of the affiliated organizations would, as far as possible, effect local organizations in each county of the State, or at least delegate a local representative, to whom the recommendations of the Central Committee will be sent, and whose province it will be to notify members of his profession or society

of such measures as the Federation may endorse, and see to it that the legislators of his district are asked to give their support to such measures. This will, if carried out, bring very forcibly to the attention of our legislators the fact that all of the various public health interests are supporting the measure and are working in harmony supporting its purpose.

An arrangement has been perfected by which the various newspapers throughout the State, particularly those reaching the more isolated communities, will be supplied regularly with news items relative to endorsed bills and the recommendations of the Federation, so that in this way the public will be kept in touch with the work being done.

That an organization of this kind may serve a most useful purpose is evident from a most casual view, giving as it does an opportunity for the elimination of friction between the affiliated organizations, and the opportunity, through the local centers, of a broader understanding of legislative measures thought desirable for the interest of the public health, and having behind it the active support of such a representative class of citizens as make up the personnel of the organizations and societies; its recommendations must certainly impress the public and the lawmakers as worthy of consideration. This, then, is your province and mine—to see that members of the Legislature fully appreciate that there is now a concentration of interest, and that such legislative measures as the Ohio Public Health Federation endorse have been given a careful consideration and are most deserving of support; that our associates and friends be advised of the purposes of the Federation and be made to appreciate that its work is for their ultimate protection, and not for any selfish interest of ourselves.

There is a most urgent need for this organization; powerful lobbys are at work constantly, having behind them heavy financial interests which seek to promulgate laws favorable to their selfish ends, rather than the interests of the people. Unscrupulous politicians do not hesitate to play the game for what it is worth, and we, unfortunately, are unable to keep our public service clear from the unscrupulous. Honest men, too, if uninformed, often are led to give support to measures which they would not countenance did they appreciate their import.



The public looks to us for advice and counsel, along these lines, and leaves in your hands and mine the directing of public health measures. Are you doing—will you do your share in the work that is at hand? If you will, give your undivided and entire support to the recommendations of the Central Committee of the Ohio Public Health Federation. Its objects are beyond reproach; its recommendations may be relied upon.

If the Federation receives the cordial support of the members of the affiliated bodies and becomes a permanent organization (in its present form the arrangement is only a temporary one), there seems to be a most promising field for its endeavors; existing laws may be brought into harmony, a co-operation of interest be developed, the friction that is so prevalent between the different societies and organizations be entirely eliminated, and as we become better acquainted and come to a clearer understanding with our fellows and neighbors, a gradual adjustment be brought about, so that finally we may have all health regulations correlated and working in harmony. So, looking ahead, we may even dare to dream of that Utopian condition in Ohio when all public health matters will be gathered into a central commission which will have as its province the protection of the public against impure foods and medicines, the collection of all vital statistics, enforcement of all health regulations, examinations and licensing of physicians, pharmacists, dentists and nurses, and the general direction of all matters relative to the public health. This is indeed a dream of Utopia.

---

**Major-General Gorgas.**—For the first time in our history a physician holds the rank of major-general. Regenerator of Havana, preserver of the Panama Canal, Surgeon-General of the Army, President of the American Medical Association, scientific physician and knightly gentleman, Congress could honor General Gorgas only by creating a new precedent. In fitting company with Goethals, who dug the canal, stands Gorgas, who kept the men alive while they dug it. With this new rank goes the thanks of Congress and a life appointment as surgeon-general. The reward, unprecedented as it is, is in due proportion to the magnitude of the work. A canal has been completed, uniting two great oceans, realizing the dreams of civilization for four hundred years. A pestilential tropical swamp has become a health resort. Not only the nation, but the world, has been taught the value of scientific sanitation. The toils, the struggles, the difficulties of the past are forgotten, the work is completed, the honors are fairly and equally awarded to the two men who made the canal possible. All honor to Major-Generals Goethals and Gorgas and to the men and the professions they so nobly represent.—*Journal American Medical Association.*

## THE VAGOTONIC NEUROSIS

By B. L. SPITZIG, A. B., M. D., Cleveland, Ohio

After all disorders of metabolism and internal secretion, all infections and drug-addictions are excluded, there remains a host of chronic ailments, the most disconcerting of all to our therapeutic efforts. Fully one-fourth of ambulatory neurasthenics are shifting constantly from one consultant to another and, becoming discouraged with medical treatment, eventually resort to every known form of charlatanism. For their protection these personal observations are recorded in the hope that this paper will stimulate greater interest in the study of the vagotonic neurosis.

The writer is well aware that the concept of vagotony, as originally proposed by Eppinger, is doubted by some clinicians. The hormone-theory, it is true, has not been confirmed; but with due conservatism it may be held that Eppinger's syndrome is a functional disorder of the para-sympathetic (cranio-sacral) system, of unknown etiology but demonstrable through well-defined signs and symptoms. What is most interesting to the therapist, this neurosis is controllable through appropriate treatment in a greater proportion of cases than any other functional disorder.

In an earlier publication<sup>1</sup> the commoner symptomatology was discussed in this order: Spasm, pain and tenderness of the colon; intestinal stasis and mucous disease; hyperacidity and delayed motility of the stomach; disturbances in rhythm of pulse and respiration; general increase of secretions and various vasomotor phenomena. This writing is supplementary to the above by the addition of a number of fairly constant symptoms occurring in this series of fifty vagotonics. With reference to sex, females were in the great majority, constituting thirty-five of the total number. It may be interesting to add that twenty-five of these were of olive-complexion. The madonna type is an extreme vagotonic, with exaggerated patellars and diminished pharyngeal and corneal reflexes. Several of this type were stated to be suffering from hysteria. It is true the globus hystericus and phantom tumor were sometimes in evidence. As to age, these patients ranged from fifteen to forty years, and almost two-thirds occurred during the third decade.

Contributory causes were not found wanting. Intense mental application preceded the disorder in one-half of the cases. The office-worker, with his burden of responsibilities, as well as



the college-man preparing for his finals, are ready victims to this disorder. Alcohol, and more particularly tobacco, were used to excess by two-thirds of the males. Sexual neurosis occurred in twenty of the series. Excessive venery is directly associated with vagotony in numerous instances. Judgment is reserved whether this acts by predisposition or follows the disorder in virtue of the hypertonic condition of the pelvic nerves. Over-indulgence in the newly married was the most frequent circumstance. The severest reaction occurred in those who practiced preventive measures. In celibates spermatorrhea and homosexuality were frequently acknowledged. In the nature of dietetic factors the most constant finding was a history of excessive starch in the food. The daily use of large amounts of patent flour seems concerned in the production of vagotony, and this will constitute the basis of a future report.

**Vaso-motor instability.** Variations in this system are very common. The facial color is ruddy; the hands are pale and moist. Embarrassment occurs easily, with ready play of color. A rather constant phenomenon is the cyanotic mottling of the extremities, particularly the inner side of the forearm. Slight pressure with finger-tips renders the area pallid, this pallor reverting quickly to the former mottling. Dermographism is most typical on the dorsum, the imprint of corset-stays oftentimes lasting throughout the examination. The skin is highly sensitive to chemical irritants. Croton oil, mustard and cantharides evoke a reaction far greater than in normal individuals. Urticaria and pruritus were found in eight instances. Two others developed ecchymoses and angioneurotic edema at different times. An idiopathic arthritis was noted in four cases.

A fairly constant indication of vaso-motor instability is the reaction the vagotonic shows to cold. Damp, cold weather is poorly tolerated, causing vascular congestion of the nasal mucosa and interfering with drainage of the nasal sinuses. These individuals react poorly to cold bathing. Mere dipping of the hands in iced water is often sufficient to cause pulse changes, cramps, nausea, spasmodic cough or dyspnea. This reaction is accompanied by a rapid fall of blood pressure, the blood mass probably remaining in the splanchnics. This similarity to surgical shock and the anaphylactic state has frequently been noted. Vaso-motor changes may occur in the organs of special sense. Aural disturbances were found in twenty cases. Roaring and tingling

occur most frequently after change of position, and particularly after retiring. There may be earache and subjective vertigo. In extreme cases the vagotonic complains of attacks of transient syncope, preceded by a slight mental aberration.

**Heart.** Cardiac neurosis was present in one-half of the series. Apical throbbing and oppression were the commonest complaints. Disturbed rhythm occurred in four cases of extrosystoles, three of bigeminal pulse and one of embryocardia. Functional murmurs appeared at times when the neurosis was strongly evident. An interesting feature was the shifting of dullness. Increase of the transverse diameter, more often right-sided than left, may diminish with treatment of the neurosis. Functional angina merits special attention. Five cases complicated by a vertical heart had for their chief complaint intense pain below and to the left of the apex-beat. The ribs in this area are tender to pressure. This neurosis is dependent upon the lowering of the diaphragm on the left side, in which position the muscle exerts greater traction on the costal attachments. There are various methods for eliciting cardiac reflexes in the vagotonic. The simplest procedure consists in pressing the carotid sheath just above the clavicle. This test accentuates the cardiac irregularities and sometimes induces nausea and alteration in respiratory rhythm.

**Stomach.** The most frequent gastric neurosis is hyperacidity with pyloro-spasm. Perhaps two-thirds of the hyperchlorhydrias not dependent upon organic changes are vagotonic. This neurosis frequently simulates gastric or duodenal ulcer. In the absence of occult blood and definite fluoroscopic changes it is reprehensible to subject a presumptive case of ulcer to operation without a thorough trial of vagodepressive treatment.

A more important neurosis will be treated at length, namely, gastric crisis in vagotomy. The patient is acutely seized with violent colic, generally in sequence to hurried eating. The epigastrium is rapidly distended; heart-action and respiration become embarrassed and there may be a distinct rigor. Vomiting and belching are ineffective, retching being practiced until the face is livid or unconsciousness intervenes. After a variable period, generally through the action of hot drinks, the subjects regurgitate air and food. Thereupon the pains are eased and the body breaks into profuse perspiration. In five instances the victims motored excessively, and a hard ride after a heavy dinner resulted in the crisis.



The sequence of events seems to be this—the overloading of the stomach, distended from previous excesses, leads to pylorospasm and retention. The trauma incurred in motoring aggravates the condition by straining the gastric attachments and inducing spasm of the cardia as well as pylorus.

In six young women a similar crisis occurred which could not be ascribed to motoring. Here the reason lay in the congenital asthenia. All were of the Glenard-Stiller type with visceroptosis, movable kidney, floating tenth rib and dynamic aorta. The stomach was of the water-trap instead of the cow-horn variety. There was gastric atony with delayed motility, but no gastrospasm. The most characteristic feature of vagotonic asthenia is splanchnic relaxation, which undoubtedly contributes to gastrointestinal and uterine catarrh. Three cases of the Glenard type had in addition the vertical heart and anginal attacks mentioned before.

**Colon.** The symptoms and signs of colonic spasm were considered in a previous writing<sup>1</sup>. Perhaps the most important feature is the differential diagnosis of chronic appendicitis. In vagotony pain is more diffuse and constant. It is more oppressive than boring and partially relieved by pressure applied over the colon. Further, physical effort, menstruation and psychic states (fright) are likely to exaggerate the discomfort. It is almost needless to refer to the value of inquiring about defecation. The stools in vagotony are aptly characterized as sheep-droppings and are mixed with a variable amount of mucus. When the colon is greatly irritated, constipation is replaced by diarrheal passages of frothy mucus and hard faeces. Spasmodic diarrhea is characteristic in that it occurs at times of great emotion. Fright, worry, and even great joy, may provoke an urgent desire for defecation, with more or less borborygmi and tenesmus. Hasty eating, drinking of iced water or the smoking of a strong cigar produce a similar effect.

Local examination of the colon affords very definite information about the degree of spasticity. The insertion of the proctoscope is attended by the greatest difficulty and usually has to be abandoned. If the operation proves successful the spastic contracture can be recognized, and as the instrument is withdrawn the wall of the gut is found to contract over the receding edge of the tube. The severity of spasm can be ascertained further by

inflation. In the vagotonic a small amount of air induces colicky sensations throughout the colon, and any additional pressure evokes nausea and retching.

The most accurate means for determining the state of spasm is the fluoroscopic examination. The bismuth enema accurately visualizes the dimensions of the bowel and differentiates the atonic from the hypertonic parts. Moreover, the mobility and the degree of fixation or adhesion can be determined at the same examination. The sigmoid is frequently pouched and the descending colon appears as a narrow ribbon. The bismuth is then massaged beyond the splenic flexure, and distends the areas of greatest atonicity, the proximal portions of the flexures, the mid-point of the ptosed transverse colon and the caecum. The patency of the ileocaecal valve is also determined. A comparative examination after several weeks of treatment determines the progress of the case. Under favorable conditions the colon is filled more readily and uniformly, and the areas of atonicity gradually disappear as the interposed spasm is relaxed.

**Bladder.** Excessive irritability proved to be the most frequent complaint in respect to this organ. Urgency of micturition and strangury follow emotional excitement and intense mental concentration. A most instructive case in this series was an overworked individual who suffered from insomnia and voided a litre of urine within the space of one or two hours. As to pathologic constituents, albumin was present in the urine of two cases who presented a general form of asthenia. Earthy alkalies and chlorides were increased with sufficient frequency to demand attention.

**Psyche.** In conclusion it may be remarked that mental anomalies occurred in twenty cases, ranging from the mildest morbidity to melancholia. The severest forms betrayed a beginning mental aberration. Emotionalism was a common finding. In the great majority of cases insomnia was the most disturbing element during vagotonic attacks. Professional men described the most characteristic form. A train of mental activity is started from which there is no deviation. After considerable study of the mental state one is forced to the conclusion that the higher centers are directly involved in these cases of vagotonic neurosis.

1. Vagotony and Its Relation to Mucous Colitis, *Jour. A. M. A.*, Jan. 13, 1914, p. 364.



## KERATITIS PARENCHYMATOSA RELATIVE TO THE OLD AND NEW ANTISYPHILITIC THERAPY

By JAMES STOTTER, M. D., Cleveland, O.

My personal experience with Salvarsan is confined to reading medical reports as from time to time they are published in professional journals, and to the observation of a few of my own cases. Perhaps this brief contribution will best illustrate my viewpoint.

*Case 1.* Young woman, about 22, Italian. First consultation, October, 1913. Intelligent; healthy appearance. Left eye normal. Right cornea showed four small gray spots running through the deeper layers; pupil small, iris normal in color and structure; conjunctiva sclerae et palpebrae discolored to dark gray (due to long treatment in Italy with either *argentum nitricum* or *cuprum sulfuricum*). Patient complains of continuous pain in this eye, inability to see, as well as with the other eye; photophobia, et cetera.

There were no means for substantiating my primary diagnosis of keratitis parenchymatosa. Patient's father troubled with pronouncedly nasal speech; apparently cachectic; patient has for months undergone local treatment, both here and in Italy, without resultant improvement.

Present treatment: In the main, the well-established anti-luetic therapy; hot bichlorid compresses four times daily for half-hour periods; calomel powder and atropin every day or every other day; mercury protojodid internally; abundance of fresh air, frequent mouth wash and strict sanitation.

With the change of treatment the eye began to improve, and after three months the patient was discharged cured, with instructions to return in a few weeks to have her eyes refracted, to guard against future eye strain. Did not see the patient, however, until eight months later, when she suffered from another inflammation, this time, however, of the left eye! It was a plain case of keratitis perenchymatosa in the other eye, which, however, yielded readily in a few weeks under the treatment above described.

Ex juvantibus my original diagnosis was confirmed.

*Case 2.* High-school girl of 16 consulted me in February, 1914, complaining of poor vision and inflammation of left eye; conjunctiva injected, iris normal, pupil dilated, a few maculae

running through the whole structure of the cornea. During eight weeks' treatment by a local oculist method used had consisted of "a few drops" (evidently atropin) every day, and twice a week "some white powders" were applied. No internal medication employed. Nothing definite had been expressed in the way of diagnosis or prognosis.

Although assured at first glance of a case of keratitis (specific), I requested the mother accompanying the patient to send her husband to me. He has every appearance of robust health, but frankly admitted syphilitic infection as a young man.

Under treatment precisely as that indicated in Case 1, this patient improved from the beginning and after proper refraction now attends school, which she was prevented from doing the preceding term.

*Case 3.* A little girl of seven was brought to me in June, 1914, with inflamed left eye, poor vision, to the extent of light-perception only, and growing worse rapidly. Right eye normal; left eye, conjunctiva sclerae injected, iris and pupil normal in color and contour, photophobia; cornea shows one large phlyctenula in center, occupying the greater part of cornea; adenoid typus, mouth-breathing, et cetera. No hypertrophied tonsils, no adenoids, however.

Here diagnosis was retarded by the similarity of the phlyctenula to that frequently encountered in conjunctivitis lymphatica. Also, it was difficult to decide by any sort of illumination whether the deeper layers of the cornea or the membrana of Bowman alone were affected. The patient's mother states that she had suffered two miscarriages from unknown causes, and the father admits syphilitic infection during his young manhood.

The therapy already described accomplished a complete cure during the summer months, the child attending school. The mother has since suffered another miscarriage.

These three cases in my opinion were luetic, although as far as my knowledge goes no Wassermann test was made. In any case, that test was not deemed rational, since neither a positive nor a negative reaction would have conduced to a change either of diagnosis or treatment. In a discussion following the observations of Doctor R. C. Borden, of Boston, on "Latent and Tertiary Syphilis in Diseases of the Nose and Throat," it developed that the Wassermann test is not a dogma to be sub-



scribed to unconditionally. I refer in this connection to the statement of Doctor Henry Horn, of San Francisco, that "a Wassermann reaction was had on a certain patient, in which the blood was divided in two parts, and both specimens being sent to the same laboratory, one was returned as negative and the other as positive."

Regarding the modern treatment of syphilis, it is well to say that both the salvarsan and neosalvarsan modes of therapy are fully recognized as omnipotent factors in general upon the established fact that the spirochetæ are liberated, and directly attacked by this remedy. Nevertheless, it seems difficult to explain the phenomenon of retrobulbular-neuritis and neuroretinitis appearing after the first injection of salvarsan.

Doctor William F. Hardy, of St. Louis, reports a case in which a patient developed a neuroretinitis together with involvement of the uveal tract four weeks following an intravenous injection of salvarsan. As the case was positively luetic and the whole picture attributed to syphilis, a second dose of neosalvarsan was given intermuscularly. This patient left the hospital totally blind in both eyes. A second case with intravenous salvarsan injection developed, three months later, a neuroretinitis in the left eye and iridocyclitis, resulting in total blindness. A third case is given to me by a leading authority as relating to an army officer injured in the left eye. During treatment the eye gave signs of a parenchymatous keratitis. The Wassermann test being applied, the patient positively denied any syphilitic infection. Nevertheless, salvarsan was employed, with the result that the other, uninjured eye, up to that time perfectly healthy, grew incurably blind.

It would be unfair to the well-deserved reputation of salvarsan to attribute any a priori cause and effect to the remedy. Yet the conscientious practitioner must challenge unlimited responsibility in the employment of any new regime of treatment in keratitis parenchymatosa, more especially when the old therapy fully performs its duty. We must not forget that to the oculist the loss of an eye means as much as the death of a patient to the surgeon.

In fine:

Why discard the thing in hand  
For something in a far-off land?

*Lennox Building.*

## SCOPOLAMIN IN THROAT AND NOSE OPERATIONS\*

By MYRON METZENBAUM, M.D., F.A.C.S., Cleveland, Ohio

Scopolamin or hyoscin hydrobromid has been in constant use for a quarter of a century in institutions for the care of the nervous and insane. It is the best of cerebral sedatives for controlling and quieting alcoholic and traumatic delirium.

It was from my knowledge of its benefits in these conditions that I first administered scopolamin, in 1900, to modify or control the delirium of the excitation stage in ether anesthesia. From 1900 to 1910 I administered a physiological dose of scopolamin 1,400 times preliminary to operating under ether, nitrous-oxide-oxygen-gas, cocain or novocain, and reported the results in the December, 1910, issue of the Ohio State Medical Journal.

During the past five years my observations are limited entirely to the administration of Scopolamin given before 2,200 operations on the ear, nose, throat and neck.

Adults receive 1/100 gr., usually by mouth, or it may be given hypodermically one-half to one hour preceding all operations under local or general anesthesia.

Children are given a 1/200 gr. coated pill with a little water, one-half to one hour before operating. In children it is only given by hypodermic when the immediate effects are required and morphin is never combined with it.

Scopolamin acts as though it was made up of two radicals, one similar to atropin or belladonna. Since children tolerate belladonna very well, this may explain why they tolerate scopolamin so well.

The atropin radical, like atropin itself, prevents reflex inhibitory stimuli coming through the superior laryngeal nerve and its branches to the vagus. It is therefore of value if given before operations for the removal of adenoids, tonsils or operations around the base of the tongue, thyroid gland or larynx, in bronchoscopy, esophagoscopy and especially in removing foreign bodies from the pharyngeal or laryngeal region when there is considerable traction of the tongue.

The atropin radical does not check the secretion of the kidneys, but it holds in check the mucous during ether anesthesia.

---

\*Note—By mutual consent of the editors this article appeared simultaneously in the April issue of the *Cleveland Medical Journal* and the February issue of *Laryngoscope*.



In bronchoscopy there is almost no secretion to wipe away. In operations with local anesthesia on the throat there is almost no saliva to annoy. In operations on the nose the abundant nasal secretion is lessened and the usual profuse discharge following any extensive nasal manipulation in operations is held in check for several hours.

The other radical of scopolamin is a decided brain sedative, for after the administration of a physiological dose of scopolamin the preoperative nervous fear and irritability is changed to one of calm and quietude, so that when desirable the patient may be placed directly on the operating table without manifesting the usual fear and excitement. Scopolamin places the patients under a mild anesthesia, therefore in administering ether or nitrous-oxide-oxygen-gas they go under the general anesthetic more rapidly, with less resistance, requiring less anesthetic to maintain and even anesthesia, awakening more rapidly, at the same time the anodyn effect lasting for several hours. In nitrous-oxide-oxygen-gas, scopolamin renders greater muscular relaxation at the same time gives a better vaso-motor tone.

In operations of the nose and throat under cocain or novocain the preliminary administration of scopolamin is of the greatest value. The usual fretful, excited, restless patient becomes quiet, interested and helpful, so that in the removal of tonsil or foreign bodies from the throat the patient will often hold the tongue depressor and be entirely free from the usual constant desire to spit, cough, gag and explode their breath.

In nasal operations the preliminary administration of scopolamin lessens the amount and strength of cocain or novocain required, and anesthesia of the bony areas is decidedly more effective, as in the opening of the antrum or sinuses.

When scopolamin is administered in physiological doses it seems free from any immediate or remote detrimental effects, while its benefits are to quiet the patient, benumb his sensibilities and lessen his irritability to such a degree that he requires less local or general anesthesia to complete the operation.

**Baldness.**—"Baldness is much commoner in men than in women. This is true, however, only of complete baldness; thinning of the hair as a result of nervousness and other depressing influences on the health is commoner, perhaps, in women than in men. The reasons for the occurrence of baldness less frequently in women than in men are probably various. In the first place, women give much more attention to the toilet of the hair—to brushing it, and to keeping it clean and in good condition; their hats are light things that merely rest on the hair, and finally, the fat layer of the scalp, as of the skin generally, is more abundant in women than in men and atrophies later in life. Man sometimes is inclined," says *The Journal of the American Medical Association*, "to have it that baldness is a sign of intelligence and a result of mental labor, and that that is the reason it is commoner in men. This fiction is one of the few consolations that can be urged for the condition, and it seems mean to disturb it, but, truth to tell, there is no ground for it. Baldness may make one look wiser, but it occurs indifferently in the great and the small, and it is no more a sign of wisdom than long hair is of genius.

"The broad fact seems to be that in the common occurrence of baldness we have a manifestation of a transitional stage in man's evolution. The hair on the body now is the vestige of a former abundant coat. In the economy of nature, structures atrophy and disappear when they cease to have function, and the need of warmth and other protection afforded by the hair is no longer of great importance to man. Man now uses a hat instead of relying for protection for his head on a shock of hair, as his ancestors did, and, as a result, in spite of all his coaxing, the shock of hair is gradually vanishing. This does not mean that you and I can save our hair by discarding our hats. We are the result of our ancestors, and to save our hair we would have to discard the hats of all our ancestors for scores of generations back.

"According to this view, heredity is one of the great causes of baldness, and all statistics indicate that this is true. In the statistics of Jackson and of White, the condition is due to heredity in from 30 to 40 per cent of the cases.

"Mistreatment of the hair is also an important factor in the production of baldness. Daily wetting of the hair, especially if no attention is given to drying it, keeping it poor in oil by excessive use of soap and water without supplying any fat in place of that removed, failure to keep it clean, excessive exposure to sunlight, the indiscriminate use of drugs, particularly 'hair tonics,' and overzealous treatment by barbers and hairdressers—all of these causes are influential in the production of baldness, and are to be guarded against, particularly in the care of hair of those who have already a predisposition to the condition.

"The effects of heavy and tight hats by interfering with the circulation of the scalp is considered to be of great importance, and there can be little doubt that it is a factor to be considered. Hats should be light. They should provide for circulation of air, and should not bind the head. It can at least be said for women's hats that usually they are better in these respects than men's.

"But after all other factors have been considered, we must still come back to seborrheic dermatitis—dandruff—as the most important cause, and the one to which most care must be given in preventing baldness. According to White's statistics, it is a factor, and perhaps the chief factor, in 79 per cent of the cases; according to Jackson's, in 72 per cent, and according to Elliot's, in 91 per cent.



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902.

Capital Stock, \$6,000

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH F. STONE  
2318 PROSPECT AVENUE

## ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.  
ROGER G. PERKINS, M. D.

JOHN PHILLIPS, M. B.  
T. WINGATE TODD, F. R. C. S.

## COLLABORATORS

C. E. FORD, M. D.  
H. E. HANDERSON, M. D.  
S. W. KELLY, M. D.  
J. J. R. MACLEOD, M. D.

DAVID MARINE, M. D.  
V. C. ROWLAND, M. D.  
H. L. SANFORD, M. D.  
TORALD SOLLMANN, M. D.

G. N. STEWART, M. D.

## EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.  
*Vice-President*, C. E. BRIGGS, M. D.

*Secretary*, C. A. HAMANN, M. D.  
*Treasurer*, H. G. SHERMAN, M. D.

## BOARD OF DIRECTORS

C. E. BRIGGS, M. D.  
F. E. BUNTS, M. D.  
G. W. CRILE, M. D.

C. A. HAMANN, M. D.  
C. F. HOOVER, M. D.  
S. H. LARGE, M. D.  
J. B. MCGEE, M. D.

J. P. SAWYER, M. D.  
H. G. SHERMAN, M. D.  
W. H. WEIR, M. D.

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

## EDITORIAL

### THE PUBLIC SCHOOLS AND INFANT MORTALITY

On April 11th there will begin in twenty-five public school centers lecture courses on infant mortality in its various phases. By the end of the school year twelve hundred talks will have been given to six thousand girls of the seventh and eighth grades. These lectures will be given according to a co-operative scheme by the nurses of the Medical Inspection and Physical Education Division and by the teachers of the

Domestic Science Department of the Board of Education. Both of these groups have attended lectures given by the Director of the Bureau of Child Hygiene of the municipal Department of Health on the subjects which they are to teach to the children. These courses to the children are not optional, but represent a part of the regular compulsory curriculum of the public schools.

The Babies' Dispensary and Hospital long ago realized this great opportunity for education in preventive medicine and also its great importance, and finally succeeded in starting this work by giving the services of one of its nurses during the months of April and May, 1912, in order to demonstrate its feasibility and value. During 1913 the Board of Education placed this work in the hands of the Domestic Science Department, and in 1914 in the hands of the Medical Inspection and Domestic Science Departments. During both of these years the work was given as a part of the compulsory school curriculum, but not on as large a scale as it is planned now.

The work is important for three reasons:

First, because it aims to train the future rather than the present mothers in preventive medicine pertaining to infants;

Second, because it includes practically one hundred per cent of the future mothers by being given to all girls graduating from the public schools—if this training were given to girls of the high schools, many of the future mothers, and especially those that need the education more than others, would not get it; and

Third, because it tries to impart to these mothers the great and many advantages of preventive over curative medicine.

Cleveland was the first city in this country to establish this work in a sound and proper manner, namely, as a compulsory part of the school curriculum and not in the form of an optional course.

That this activity will be of great advantage to the medical profession in its education of the public there can be no doubt. If only two points are remembered by the girls at school, namely, that prevention is better than cure and that many cases of illness and death, especially amongst infants, can be avoided by knowing the simplest rules of hygiene, this work will be a great aid to the medical profession in getting the public to understand the importance of health.

H. J. G.



## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. McGEE, M. D.

**Paroxysmal Tachycardia.** In the *American Journal of Medical Science* for April, Walter L. Niles reports a case of paroxysmal tachycardia, with observations on treatment. Lewis has shown that the mechanism of auricular fibrillation, auricular flutter, and paroxysmal tachycardia, is formation of impulses at an abnormal point in the auricular wall. He concludes that in paroxysmal tachycardia the impulses are generated at a single point, while in auricular fibrillation impulses are generated incoordinately in many foci. The only drugs of value in auricular fibrillation are the digitalis bodies, and it is in this condition that their best effects are seen. In auricular flutter, also, Lewis and Ritchie recommend digitalis, each reporting instances in which the normal rhythm was often restored by its use. The return to normal rhythm was often preceded by a short period of auricular fibrillation. Inasmuch as the mechanism of paroxysmal tachycardia is somewhat similar to that of auricular fibrillation, and almost exactly like that of auricular flutter, one might well expect benefit from the use of digitalis in regular tachycardia, such as was obtained by the administration of strophanthin in the case he reports. The pharmacological action of strophanthin is the same as that of digitalis. It has many advantages in an urgent state, such as prolonged tachycardia, with a dilating heart, notably ease of administration by intramuscular injection, which insures rapid absorption, and therefore prompt effect. Strophanthin is a powerful and sometimes dangerous drug, but it should often be repeated more frequently than is usually done, that is, until a satisfactory effect, such as is obtained after several days of digitalis administration by mouth, is secured. The patient must be watched carefully for indications of severe poisoning, especially a high grade of heart-block, which can be released by atropin. The induction of auricular fibrillation should not be feared, as when that occurs, the tachycardia will cease, and it may be transitory, the heart subsequently returning to the normal rhythm. Even if it persists, it is often a conservative state, and reduces the limits of response very slightly. He believes that strophanthin, in repeated doses if necessary, is to be recommended for prolonged attacks of paroxysmal tachycardia.

---

**Diabetes:** James Tyson, in the *New York Medical Journal* for April 3rd, treats of the modern therapeutics of diabetes mellitus. As to acidosis, "Fats are burned in the fire of the carbohydrate," is a graphic statement, not altogether correct, but it emphasizes the fact of the dependence of acetone metabolism upon carbohydrate metabolism. Notwithstanding our efforts to the contrary, acetone diacetic acid, and oxybutyric acid accumulate in the blood of many patients and become a source of danger. Fortunately, we have a class of remedies which neutralize these poisons, although not capable of preventing their production. These are the alkalis, especially sodium bicarbonate. Very large doses are given by some, as much as an ounce to two ounces a day. Von Noorden does not advise such large doses, but still gives more than Tyson, say half to two-thirds of an ounce in a day. Tyson seldom gives more than a dram or a teaspoonful three times a day, but in nearly all cases where decided acidosis is present, he gives it nearly continuously. He finds that American patients can rarely bear the large doses advised to foreign patients. The citrates of sodium and potassium are more palatable than the carbonates, and less disturbing to the stomach; somewhat larger doses are required. In his experience, almost all constipated cases do badly. Magnesium may be used where there is constipation, and calcium where there is diarrhea. Castor oil is a suitable aperient, and may be given daily in proper doses. When the stomach rebels

against the large doses of soda, the "drop enema" of Murphy may be used, in the form of three per cent solution. Intravenous injections of  $3\frac{1}{2}$  to 4 per cent of the sodium carbonate in the same manner as salvarsan. These are, of course, reserved for the severe cases, when diabetic coma threatens or is actually present, but in his experience the results are temporary.

In the matter of diet, the stage of incipient coma, all restrictions, except as to pure sweets, are removed. Von Noorden, in certain cases, advises no food, but large quantities of whisky, well diluted, three to five ounces daily. These alcohol periods are continued one to two days, until improvement sets in, when they are followed by milk and oatmeal soups. Other narcotics, like opium, chloroform and ether, increase the acidosis. As to medicines, in the earlier stages of diabetes, they have not much value, still less in the later stages. Their utility has been for the most part determined empirically. Why salicylates are of any use he does not know, but it is true that their administration is followed at times by a temporary reduction in the amount of sugar in the urine, especially in cases where there is much muscular pain. Opium and its alkaloids are undoubtedly effective, probably because of their sedative effect, lowering the stimulus sent down from the central nervous system to the "sugar factory." The bromides may act similarly. On the other hand, the opiates generally constipate, and constipation is a drawback to successful treatment, while the possibility of acquiring the opium habit must always be borne in mind. Hence he puts them off until last. He has been charged with not giving jambul the credit it deserves, but he has never found it of any use when taken alone. On the other hand, he is sure arsenic is of some value in a few cases; why, he does not know. He has shown this many times by noting the reduction of sugar in the urine under its use, and a return of the sugar when the drug is discontinued. In other cases, it has been entirely without effect. In prescribing arsenic, it is better to give doses so small that they may be kept up continuously, rather than large doses that must be interrupted by the physiological effect. An important measure is rest, especially in bad cases.

---

**Drug Eruptions:** In the *Medical Record* for April 3d, Wm. P. Cunningham writes upon the bugbear or drug eruptions. Much has been written of drug eruptions. Many elaborate pen pictures and many obscure camera pictures have been published from time to time for the enlightenment of the practitioner upon these important eccentricities of the skin, with the net result of profound bewilderment and doubt. Drug eruptions have two constant characteristics. They appear suddenly, and always in connection with the taking of drugs. The second phase may sound like stilted vapidty, drug eruptions being necessarily dependent on the taking of drugs. But the importance of its emphatic inculcation lies in the fact that its purport is so often ignored, and the eruption attributed to something else. If in every case of skin condition involving any obscurity, the doctor would interrogate the patient as to the taking of drugs, he would often get on the trail of a gratifying discovery. In fact, it should be made a point of routine investigation, no matter how plain the case appears to be. The acneiform manifestation of cutaneous bromism is the commonest and least important of its effects. In some individuals there would appear to be a sort of malignancy in the outbreak, as evidenced by aggregations of pustules into carbuncular masses, etc. These appearances are mystifying, as a rule, until the idea of "drug eruption" flashes across the mind, whereupon the problem is solved as if by magic. The key to the varied phenomena of cutaneous bromism is that it is a pustular dermatitis, whether it appears as isolated pustules of the acne sort, or as conglomerated masses of the same, or as a papillary hyperplasia, thickly studded with these primary lesions.



Bromin dermatitis is the most frequent and, in its outré expressions, the most puzzling of the drug-engendered lesions of the skin. Iodin eruptions come next in order of frequency and importance. The usual manifestations are similar to those of bromid, namely, a pustular acne involving face and body. The combined administration of the bromides and the iodides, as is often practiced in cases of spasmodic bronchitis, exaggerates the tendency to the production of the ill effects of both. The newer methods of managing gonorrhea have not wholly displaced those heretofore in vogue, and the morbilliform eruption of cubebs and copaiba is occasionally encountered. The analgesic action of the coal-tar preparations has merited for them a pronounced popularity. We are all familiar with the cardiac depressant effects, and cyanosis occasionally observed. Fortunately, they frequently expend their toxicity on the skin, and set up an efflorescence of the most irritating character. The percentage of outbreaks is undoubtedly small, but remembering the extensive use of these remedies, both in prescriptions and proprietary remedies, the aggregate is large. They all act pretty nearly the same. The symptoms really constitute a toxic erythema, and the variety of the lesions corresponds to the intensity of the cutaneous reactions. All these lesions itch and burn, depending on the degree of cutaneous reaction, and the nervous irritability of the subject. These particular drugs differ somewhat from the bromides and the iodides in making their presence quickly felt. One dose is apt to create a storm of trouble almost immediately. There are many people with marked idiosyncrasy to quinin, usually shown in nervous hypertension and tinnitus aurium. Some impressionable subjects, however, have the disagreeable effects confined to the skin. A scarlatinal flush, with a sense of heat, or a furious attack of urticaria, are the disturbances generally experienced.

Morphin induces in most of its partakers an intense pruritus, without discernable lesions. Sometimes it will single out an unusually sensitive victim and splotch him with an erythematous morbilliform, or urticarial outburst. Contracted pupils and a sweaty skin should aid in coming at the right solution; the intense itching of the end of the nose should also direct suspicion in the proper direction. Salicylate of sodium, one of the most valuable drugs in our pharmacopoeia, is sometimes productive of a disagreeable dermatosis, which is none the less noteworthy, because of its rarity. The salicylate acid is the offending element, and it is present in every one of the fancifully styled and widely advertised substitutes for salicylate of sodium. Arsenic, after long-continued use, may produce pigmentation of the general surface and keratosis of the palms and soles. Herpes zoster has developed often enough in the course of arsenical medication to establish an etiological connection. Its faculty of causing peripheral neuritis is the explanation. It may be a matter of interest to learn that there is not a drug in the hands of the practitioner that has not its predestined victim. The treatment of drug eruptions is simplicity itself; stop the irritant. If need be, apply a soothing lotion for a few days to help along.

---

**The Pituitary:** The March number of the *Medical Review of Reviews* states (*St. Paul Med. Journal*) that S. Solis Cohen has been using with gratifying success preparations of the posterior lobe of the hypophysiscerebri in the treatment of conditions accompanied with lowering of vasomotor tonus, such as described under the head of the relaxant or ecstatic variety of ataxia autonómica; among them angio-neurotic edema, urticaria, asthma, hay-fever and the congestive variety of migraine. (2) The posterior pituitary principle is also useful in those varieties of Grave's syndrome attended, constantly or frequently, with low blood-pressure, and a tendency to undue readiness of perspiration, as well as in the minor varieties of miscalled hyperthyroidism so frequently

mistaken for neurasthenia, etc. (3) A third and very important use of the posterior pituitary principle has been developed during the recent studies of the treatment of acute lobar pneumonia. It has been observed that in most cases the gravity of the case is in direct relation with the excess of pulse rate over blood-pressure. The lower the systolic pressure as compared with the frequency of the pulse, the more likely is the case to have an unfortunate termination. On the other hand, in those cases in which the rise of frequency and the fall of pressure are both moderate, run a much more favorable course. Irrespective of frequency, a pressure of 90 or less is in itself a grave omen. Obviously, measures that will decrease the pulse frequency, and correspondingly increase the blood pressure, will aid in bringing the patient out of danger. Different drugs have been used, with varying success, to bring about this result, but gradually the accumulation of records seem to demonstrate the superiority of pituitary preparations. Its only drawback is the expense. The ordinary dose is one c.c. one ampule intramuscularly every three hours, more or less, according to effect.

---

**Pericarditis:** In the March number of *American Medicine*, William A. Jenkins considers the treatment of acute pericarditis. Prophylaxis is of the greatest importance in treating pericarditis. There are no specifics, and the best one can do is to be well trained in recognition of the diseases which may produce pericardial inflammation, and do everything possible to forestall this complication. Pneumonia and rheumatism are the two diseases most frequently accompanied by pericarditis and endocarditis; therefore, the primary indications are to combat the infections by keeping the system well filled with fluid to dilute the poisonous products, and to administer the proper remedies to insure free elimination. After pericarditis has developed, the treatment is largely symptomatic, the first indication being to relieve the pain, which is sometimes so intense as to be almost anginal in character. As to position, the semi-recumbent posture affords the greatest comfort. Local applications are beneficial in the majority of instances, the best being the icebag. A persistent dry cough is sometimes an annoying symptom, and while there is nothing to be expectorated, the cough must be relieved. The best remedies here are the sulphate or phosphate of codein, one-fourth-grain doses, or heroin hydrochlorid, one-twelfth-grain at a time. One cannot be too assiduous in attention to the gastrointestinal tract in the treatment of pericarditis. As to direct medication, it must be confessed that there is no specific treatment for pericarditis. To be most effective, treatment should be commenced while the disorder is still in the dry stage (pericarditis sicca), i. e., before marked effusion has occurred, thus inhibiting the inflammatory process. In following the ancient rule of administering large, frequently-repeated doses of the salicylates, well diluted with water, gastric disturbances are almost certain to occur. To avoid this, it is advisable to give with each dose twenty to thirty grains of bicarbonate of sodium, which preserves the salicylate intact until it reaches the intestinal tract, thus preventing gastric disturbance. Bicarbonate of potassium in fifteen to twenty-grain doses every four hours, is sometimes beneficial. To prevent pericardial effusion, diaphoretics, diuretics and cathartics have been highly recommended, but the profession has rather lost faith in their power, as far as the direct removal of pericardial effusion is concerned. In certain cases, however, it is believed the prolonged use of these remedies has a legitimate field. Effusion in the pericardium may become dangerous from two standpoints. First, stagnant material of this character, should it become infected, develops a purulent pericarditis. The second danger is mechanical asphyxiation of the patient. When other measures fail, paracentesis may be performed.



**Nucleic Acid:** Bayard Holmes, in the *Critic and Guide* for March, treats of nucleic acid and dementia precox. In 1868, Friedrich Miescher, of Hoppe Seyler's laboratory, attempted to work out the chemistry of the nucleus. When he went to Basil to take charge of the salmon industry he found himself in possession of an inexhaustible supply of nuclein-bearing material. The salmon milt was composed of spermatozoa in a dilute salt solution. From his biologic studies, Meischer knew that the head of the spermatozoon corresponded to the nucleus of the testicle epithelium from which it sprang. The tail was negligible and easily removed by artificial digestion. With an unlimited supply of nuclein it did not take long to demonstrate the character of the base, which he named protamin, and the acid is now called nucleic acid (nucleinic acid). The fact that sodium nucleate had its origin in the cell nucleus aroused the imagination and fixed the attention of therapeutists and many applications were early made of the remedy in all sorts of diseases, from diphtheria to locomotor ataxia, and from pneumonia to tuberculosis and syphilis. There are some very pregnant facts that ought to be available for all clinicians today. One point to be remembered is the relation between the sodium nucleate and the nucleo-albumin from which it is derived. It has been actually demonstrated that even the *sodium nucleate* derived by displacement of the albumin bases from the thymus glands of calves, is *chemically distinct* from the sodium nucleate derived from yeast. Another fact is that both experiment and clinical experience show that the sodium nucleates are inert or inefficient when taken by mouth. Whatever therapeutic value sodium nucleate has, its unique efficiency in producing an increase in the number of leucocytes in the blood is its most conspicuous effect. The hyperleucocytosis is the index of its efficiency. Whatever rational therapeutic effect sodium nucleate may exercise, it is entirely explicable by the consideration of the value of a hyperleucocytosis. A fact which the rational psychiatrist especially should hold in mind is the remarkable influence which experiment and clinical experience agree in attributing to an artificial hyperleucocytosis over the progress of infectious processes. In dementia precox the Abderhalden reaction has conclusively demonstrated a pluriglandular dysfunction. In such a case, the only weapon we have left us is the increase of the physiologic assistance of the organism. A great number of observers have reported miraculous betterment after injections of sodium nucleate. There is in the reported experience of every psychiatrist who has used the remedy as directed by Lundvall, some, often reluctant, admission of improvement or cure.

---

**Boric Acid.**—Boric acid, as an adjuvant to other remedies, is extensively used in diseases of the skin, and as D. W. Montgomery, of San Francisco, points out, its subsidiary position does not detract from its importance, though it receives less notice than it deserves in the textbooks. Besides its mild and non-irritating antiseptic property, it is soothing, and when added to water, it increases its tonicity and prevents the detrimental action that may possibly occur. The diseases in which he finds it sufficiently useful to be specially mentioned, are acne, where soaking with a hot boric acid solution is often of great benefit; pyogenic infection of the skin; furuncle, especially styes; impetigo contagiosa, where a boric and a starch poultice is one of the best applications for first treatment, the crust being removed with an ointment composed of 15 parts of ammoniated mercurial ointment, and 30 parts of zinc oxid ointment; perleche (streptococcic infection of the corners of the mouth); runarounds, and various discharging diseases of the skin. The boric acid ointment of the Pharmacopeia has a multitude of uses as an excellent non-irritating preparation, and is one ointment that is generally well made. The presence of boric acid in so many proprietary remedies is a good evidence of its generally appreciated usefulness—J. A. M. A.

## NEW AND NONOFFICIAL REMEDIES

Since the publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Cholera Serobacterin, Mulford (Sensitized Cholera Vaccine).—Marketed in packages of three syringes. H. K. Mulford Co., Philadelphia.

Meningo-Serobacterin, Mulford (Sensitized Meningococcus Vaccine).—Marketed in packages of three syringes. H. K. Mulford Co., Philadelphia.

Typho-Serobacterin Mixed, Mulford (Sensitized Typhoid Vaccine).—Packages of three syringes containing graduated mixtures of killed sensitized bacillus typhosus, killed sensitized bacillus paratyphosus A, and killed sensitized bacillus paratyphosus B. H. K. Mulford Co., Philadelphia, Pa. (*Jour. A. M. A.*, March 13, 1915, p. 909).

During March the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies:

Radium Chemical Co.:

Standard Radium Solution for Bathing.

Standard Radium Solution for Drinking.

Standard Radium Earth.

Standard Radium Compress.

The Franco-American Ferment Co.:

Lactobacilline preparations:

The Lactobacilline preparations now being advertised direct to the public, the Council has voted that their acceptance be rescinded and that these products be omitted from New and Nonofficial Remedies. A report explaining this action has been authorized for publication.

---

**The Effects of Weather.**—It is not at all uncommon to hear that a patient feels well or ill parallel to changes of the weather. There is no doubt that barometric and above all hygrometric changes produce distinct and often marked variations in sensation. Probably no information, however, is more fallacious than the vague general impressions with regard to these effects of the weather that are supposed to be common knowledge. For instance, it is a shock to most persons to learn that though dark, rainy days are supposed to produce depression, and bright, sunny weather to lift clouds of despondency, suicides are most frequent in June and least frequent in December. Cold weather is supposed to be a great source of suffering and consequent depression, especially to the working classes, and yet the cold weather months have fewest suicides and the warm summer weather the most. It is not the extremes of heat, however, which produce the despondency and ill feeling that lead up to suicide, for the climax of the curve of suicides is not reached in July or in August, when people have become run down from the persistence of hot weather, but in the pleasant month of June.

Evidently careful study is needed in order to determine the exact effect of weather on the disposition and the feelings. A careful analysis of suicide statistics was made by Dexter, who analyzed 2,000 cases of suicide in one American city. When studied in connection with the weather tables, the fact was revealed that "the clean, dry days exhibit the greatest number of suicides, and the wet, partly cloudy days the least; and with differences too great to be attributed to accident or chance. In fact, there are 31 per cent more suicides on dry than on wet days, and 21 per cent more on clear days than on days that are partly cloudy."—*Journal American Medical Association*.



## The Academy of Medicine of Cleveland

### ACADEMY MEETING

The one hundred and eighteenth regular meeting of the Academy was held Friday, March 19, 1915, at the Cleveland Medical Library. The president, C. F. Hoover, in the chair.

The minutes of the last meeting were read and approved.

The minutes of the Council meeting of March 10, 1915, were read and approved.

The attention of the Academy was called to a series of lectures being delivered by Professor Arthur Keith at Western Reserve University upon the antiquity of man.

A communication from Mr. Geo. V. Sheridan was read touching a bill proposing to prevent the transporting of accident cases past the nearest hospital, except in such cases in which a preference is expressed by the patient or by some one responsible for the patient.

Doctor C. F. Hoover then brought up the question of medical licensure. Doctor C. E. Ford read a plan which had been proposed and was being considered by the legislative committee of the Ohio State Medical Association providing for a graded licensure of individuals desiring to practice healing in any of its phases, such licensure to be under the control of the Ohio State Medical Board.

Doctor Hoover pointed out the fact that no medical law which limits the practice of healing to individuals designated by the state has ever been enforced, nor can such a law be adequately enforced. He contended that it would be just as feasible for the state to license pick-pockets as for the state to legally recognize certain of the cults. He advocated a law which would provide for a high standard of medical education and which would limit the use of the term Doctor of Medicine to those coming up to this standard. Such a law would leave the public free to employ whomever it wished, whether physician or not.

### Resolution

Whereas: the enforcement of laws designed to limit the right of medical practice to physicians of approved educational qualification has clearly failed in the State of Ohio.

Therefore be it resolved that the Academy of Medicine of Cleveland recommend that future legislation affecting the practice of medicine be directed solely to the purpose of maintaining a high minimum educational requirement for attaining the degree of Doctor of Medicine.

Be it also resolved that this Academy disapprove of any law designed to give recognition to any peculiar therapeutic device or in any way restrict the employment of any therapeutic measures.

Doctor W. H. Humiston moved that the resolution be adopted. Doctor J. J. Thomas seconded the motion. Discussion was participated in by Doctors R. E. Skeel, E. A. Powell, E. O. Houck, C. A. O'Connell and C. E. Ford.

The resolution was adopted without dissent

Prior to the program proper, the following cases were presented:

#### **1. Permanent Staining of the Cornea, following the Continued Use of Argyrol, by J. E. Cogan.**

The patient was afflicted with trachoma, and had been treated for the same at Lakeside dispensary. For a period of three years he stayed away from the dispensary, acted as his own physician, and used argyrol constantly on the advice of a friend. Permanent staining of the cornea resulted. The case is interesting in that the repeated claim has been made by the argyrol people that continued use of argyrol will not cause permanent staining.

J. M. Moore, in discussion asked whether the patient had used silver nitrate, previous to employing the argyrol?

J. E. Cogan, in rebuttal, said that the patient had used nothing but argyrol.

## **2. Two Cases of Angio-Trophic Neurosis, by W. G. Stern.**

Last year the speaker presented two cases of angio-trophic neurosis occurring in the same family. For want of a better name the cases were called Reynaud's disease. A number of men who saw the cases called them frost bites.

The cases presented occurred in the same family and are shown to prove the fact that frost bite has nothing to do with the etiology of the disease. The affection, for want of a better name, might be called symmetrical gangrene.

These children evidently have a predisposition to circulatory disturbances. They live under absolutely the same conditions as other children who do not contract the disease. In summer all of the trouble disappears. The same phenomenon has been observed many times in the late Balkan and in the present European war, in the case of men doing duty in the trenches where they are obliged to remain, for long periods of time, with their feet under water.

The regular program follows:

## **1. Under What Circumstances is Craniotomy on the Living Child Justifiable, by Reuben Peterson, Professor of Gynecology and Obstetrics, University of Michigan.**

People in general, members of the medical profession not excepted, like dogmatic statements of conduct. As a result, the profession has been entirely willing to subscribe to the dictum that craniotomy should never be employed in obstetrics. The measure has consequently fallen into disrepute.

Craniotomy has been regarded as a confession of the inability of the practitioner to cope with obstetrical problems as he found them. Renewed efforts have been made, therefore, for perfecting other methods, the use of which would obviate the necessity for craniotomy. To these efforts we owe the development of other forces, such as forceps, version, symphyseotomy and pubiotomy, and Cesarean section.

How often it would have been preferable to perforate the child than employ other methods which not only resulted in the ultimate death of the new-born and at the same time jeopardized the life of the mother? How often it would have been wiser to perform craniotomy on the living child, in cases of dystocia with contracted pelvis, than to labor to deliver a paralyzed or imbecile child, the mother bearing the brunt of all the misdirected efforts of delivery and consigned, perhaps, to death or chronic invalidism as a result? The fetus, in many such cases, is destroyed as effectually as if perforation had been done. Should it be a source of pride to the practitioner to deliver a dead baby unperforated? It frequently occurs that the physician, knowing that there is no chance for the child, refuses to perform craniotomy, against his better judgment, for the reason that the operation is held in disrepute.

In the case of obstetrical patients in good hospitals, or under the care of a competent obstetrician, craniotomy is never, or at least only rarely indicated. The physician, in such a case, should know existing conditions sufficiently early that he can plan to meet any problem by other measures. In addition, he is able, by reason of his skill and training, to perform such of the other measures as he deems advisable, in an efficient manner. However, conditions such as detailed above do not obtain universally.

In the present discussion of the indications for craniotomy, the religious aspect of the question will not be touched upon. If a practitioner decides that the measure is contrary to his religion and morals, nothing



further remains to be said on the subject. For him the matter is closed once and for all. His views are entitled to respect. On the other hand, it is but logical that other practitioners, whose religious views do not forbid the measure, should have their opinions respected.

The obstetrician is confronted in his work by two major considerations. The relative rights of the fetus and mother must both be considered and conserved. Thus, any obstetrical measure must show results both for the mother and for the child. But, if the question develops into the consideration of the rights of the mother as opposed to the rights of the child, the mother must be given the preference. Her life is of unquestionably greater value to the community, to society at large, and to her family, than that of the child.

The conditions under which craniotomy is indicated may be divided roughly into four main heads:

1. When the mother is septic.
2. When the child is feeble and not likely to live if delivered.
3. When the choice is between craniotomy or major operations in unskilled hands.
4. When the fetus is a monster, or so deficient as to make its future existence problematic.

The mortality rate in the major obstetrical operations, when the natal tract is infected, is enormous. Thus, abdominal Cesarean section, for example. In such cases operation is little short of a crime, so high is the mortality. In skilled hands the death rate amounts to thirty or fifty per cent. In unskilled hands, practically no cases survive. Most of the children, if born alive, succumb in a few days.

In selected cases, as has been said before, with competent obstetricians in attendance, the conditions will have been recognized and the proper measures prepared for. If these measures fail, then craniotomy may be employed as a last resort.

In the other class of cases, in which the natal tract of the mother has been infected, we are confronted by an entirely different proposition. The major operations, such as Cesarean section, cannot be performed with profit. If forceps and version are contraindicated in such cases, there is only one measure left, viz., craniotomy. The child, living or dead, should be perforated and extracted. To wait for the child to die in such cases is dangerous to the mother, and is certainly of no benefit to the child. Sentiment should be disregarded. Only in rare instances will the measure of craniotomy be objected to by the parturient or members of her family, if the rational of the procedure, in any given case, is explained to them.

The second indication for the performing of craniotomy, is when the child is feeble and not apt to survive, if delivered alive. It is to be admitted that it is difficult to make a correct prognosis as to the condition of the child. Thus, the heart sound, although normal, may sound weak, due to the great mass of fat in the abdominal wall, or to other causes. Thus, we must presuppose that the child is in good condition unless we can prove to the contrary. However, in a case of protracted labor with an impacted presentation, it is logical to assume that the chances of the child are not extraordinary. The same is true in cases where the head is arrested after version. In all of these conditions we should not subject the woman to great risk when the fetus is likely to die in any event. Craniotomy fills us with horror, but at the same time we are entirely willing to use the fetus as a tampon to stop the hemorrhage of the mother in cases of placenta praevia, although the chances of the child surviving are much reduced thereby. Is this consistent? The only real difference between the two procedures is that while the end result is the same in both, the circumstances of the one seem more horrible than those of the other.

The third indication of craniotomy comes when the choice lies between craniotomy or major operations, in unskilled hands. Major operations are not for the tyro. Thus, Cesarean section in unskilled hands gives a high mortality for both mother and child. Craniotomy is much better for the unskilled man, since the mother is not subjected to unnecessary risks, and major operations in unskilled hands do not mean safety for both mother or child, and in some cases neither survives.

The fourth indication for craniotomy obtains when the fetus is a monster, or is so deficient as to make its future existence problematic. The decision for craniotomy in such cases should be made without hesitation. For example, one of the most common causes of dystocia is hydrocephalus of the fetus. Anyone who has seen the miserable existence which such individuals eke out, when born alive, will not hesitate to perform craniotomy.

A. J. Skeel, in opening the discussion, called attention to the point that the mother should be given the preference, when the question of her safety comes up, as compared with that of the child. The pendulum has swung too far the other way. The general practitioner should be told plainly that when he has a difficult case, that is, when the head does not engage after several hours of good pains, he should be careful not to infect the natal tract, and should have a specialist see the case before forceps are applied. By so doing, the specialist will be able to work under favorable conditions and will be able to use the method of choice in delivering the child.

J. J. Thomas asked the speaker whether he approved of the operation of pubiotomy in the case of primiparae? According to the German school, this operation is contraindicated in the case of primiparae. However, in this country the practice is approved.

E. O. Houck, in discussion, suggested that it is difficult to set down general rules of practice. Thus, in the instances which the speaker called attention to, suppose Cesarean section was done and the mother dies. The child might have been a second Lincoln or Bismarck, whose life would have been of far greater value to society than that of the mother. Following the moral law as a rule of practice will result in a greater relative saving of the lives of both mothers and children.

W. H. Humiston emphasized the point that the practitioner of obstetrics should be a specialist in his line. High forceps as an obstetrical measure should be banished. Any man who has had a reasonably large experience in hospitals has seen many bad results from such operations. The advantages of the extraperitoneal operation over the classic Cesarean are more apparent than real. As a matter of fact, infection travels by the lymph channels, and the mortality with the former procedure is quite as high as with the latter.

Reuben Peterson in rebuttal, said that he thought pubiotomy had its place and was a valuable measure even in the case of primiparae. The speaker has performed pubiotomy a number of times, in these cases, with very satisfactory results.

The greater the experience one has with the operation of Cesarean section, except in selected cases, the more respect one has for it as a truly major procedure. Sepsis is much more common in dry labors than it is in strictly normal labors, with the membranes intact. Thus, in a case of dry labor in the speaker's experience, no vaginals had been made at all, all of the examinations having been made per rectum. In spite of this fact, the patient died of peritonitis after Cesarean section. Dry labors raise the mortality at least forty per cent in the case of Cesareans. It is foolhardy to perform Cesarean section in dry labors, or after repeated vaginals.

The speaker stated that, as before emphasized, he would decline to discuss the moral aspects of the problem. Relative to the high forceps



operation, there is no doubt that this measure should be abandoned. High forceps really have as their result the performing of a subcutaneous craniotomy. Relative to the extraperitoneal operation as opposed to the classic Cesarean, the speaker declared that he did not think the former would stand the test of time.

---

### EXPERIMENTAL MEDICINE SECTION

The eightieth regular meeting of this section was held Friday, March 12, 1915, at the Cleveland Medical Library, the chairman, T. Wingate Todd, in the chair.

The regular program follows:

#### 1. Pathology of Gaucher's Disease in Infants, by H. R. Wahl.

This disease is characterized by idiopathic enlargement of the spleen, with a fairly characteristic clinical and pathological picture. The disease has been called the Gaucher type of Banti's disease. In addition to the spleen, several other organs are involved. The disease shows a tendency to occur in several members of the same family.

The clinical picture of the disease is characterized by enlargement of the spleen, with an associated enlargement of the liver, golden pigmentation of the skin, thickening of the conjunctiva toward the inner canthus, and a tendency to hemorrhage and epistaxis.

The disease occurs practically always in children. The blood picture is characteristically negative or shows a secondary anemia. Its course is very chronic. Despite the marked physical signs, the patient feels remarkably well. Diagnosis of the condition would seem easy, with the clinical signs enumerated above. However, all of the signs are not present in all cases. Thus, some observers state that a positive diagnosis of the condition cannot be made unless another member or members of the same family are suffering from the same condition.

Other observers say that the disease never occurs in infants. The cases to be reported did occur in infants, and the findings in the cases seem to leave no doubt as to the diagnosis. The youngest case reported previously was in a child seventeen months old. The course of the disease in some cases has extended over a period of thirty-two years. The younger the patient, the more acute is the course.

The essential changes in the tissues occur in the spleen, liver, lymph glands, bone marrow. In the present cases the thymus, adrenals, kidneys and lymph follicles were also affected. The gross change is enlargement of the liver and spleen. On section the organs are a pale brown or pink color, a creamy condensed milk-like exudate being present in all of the organs. Histologically, the essential change consists of replacement of the normal parenchyma of the organs with large, pale cells, containing vacuoles or granules. The above findings were typical in the first case.

The second case was diagnosed ante-mortem on examination of a lymph gland removed for that purpose. It showed the typical changes. The patient in this case died recently. Detailed examination of the other organs showed the typical changes. Thus, it is likely that the most important factor in the diagnosis of these cases may be examination of lymph glands for typical changes. The first case was in a child aged nine months, the second a sister of the first, aged four months.

#### 2. A Study of Lipins in Gaucher's Disease, by H. R. Wahl and M. L. Richardson.

The large, pale cells, occurring in the organs in Gaucher's disease, as before mentioned, suggested by their appearance, and by the observation of droplets within their borders, that they contained some special substance. It was found by observers that this substance reacted to all of micro-chemical tests for lipoids.

It is held, however, that the micro-chemical tests are not absolutely specific for lipoids. The authors, therefore, in casting about for some surer method, decided upon a quantitative estimation of the lecithin, cholestrin and fixed fats in the various organs involved, these findings to be compared with similar determinations on normal organs.

It was found that the lecithin and cholestrin were greatly increased in amount in the involved liver and spleen, as compared with normal organs. The fat, however, that is, the fixed fat, was decreased in amount in the involved organs. The disease probably rests on disturbed fat metabolism.

It is interesting to note, in connection with the above findings, that a Russian observer, using cholestrol injections over a period of four months in animals, claims to have been able to induce an artificial form of Gaucher's disease, corresponding in its pathological picture with the findings in the true form of the disease.

### **3. Tumors of the Neck of Obscure Origin, by M. L. Richardson.**

Tumors of the lateral thyroid region have as their points of origin, in the majority of cases, embryonic rests. The cystic tumors develop from remnants of the branchial clefts, the solid tumors from remains of the branchial arteries.

The patient was a man, aged 42, with no past history of consequence, except that he had acquired a lues 20 years previous, which had manifested itself with only slight secondary symptoms. He had never been troubled with swelling or tumor of the neck, until four months prior to entrance to the hospital. At that time his voice suddenly became hoarse and disappeared, so that he could only speak in a whisper. He also had difficulty on swallowing.

On examination it was found that the right lobe of the thyroid was enlarged, irregular and moveable. Death was due to pneumonia.

At autopsy a tumor was found on the right side of the neck, lying between the right lobe of the thyroid and the trachea, firmly attached. The nodules of the tumor mass were visible in the trachea, although neither the esophageal or tracheal mucus membrane were involved by the growth.

The origin of this tumor was indefinite. The parathyroid was not found in it. The architecture of the growth suggested somewhat that of an epithelioma. The cells were arranged mostly in cords, with some cell nests. The cells were large and irregular. No distinct metastases were found, with the exception of a few cords of cells in the lungs. The tumor was sharply demarcated from the thyroid tissue. It was probably a branchiogenic carcinoma.

### **4. Tumors of the Carotid Body, by Allen Graham.**

The patient was a male, aged 48, complaining of pain in the left chest and arm. He had had thyroid enlargement since the age of 7 years. He had earlier had pain in the precordial region. The clinical diagnosis was tuberculous mediastinitis. At autopsy a carotid tumor was found.

Of the seventy-four cases of tumor of the carotid body on record, sixty-seven have been operated, while seven were discovered at autopsy. Of the seven found at autopsy, the existence of a tumor had been suspected in two, but no localization made in the carotid body. Most of the cases occurred between the ages of 30 to 40 years. Duration in the cases ranged from one week to thirty-seven years.

Of the seventy-four cases operated, only six were diagnosed before operation, the remainder being found accidentally. The mortality of the cases operated was approximately thirty per cent, the same as the mortality in ligations of the common carotid. In a number of the cases all of the carotids were ligated. Death in the cases was due to a hemiplegia, following anemia of the brain, or pneumonia, following severing of the vagus.



The carotid body should be placed, probably, in the class of the chromaffin tissues. The amount of nerve and chromaffin tissues which carotid tumors contain are out of all proportion to their size. This occurrence may be accidental. Tumors of the carotid body are benign for a long time. Later, they may become malignant. In only two reported cases, however, have definite metastases been found. Recurrence has been reported.

The present tumor is interesting in that it showed definite metastases and invasion of the thyroid, mediastinal and mesenteric glands, and also of the tissues of the neck. It corresponds definitely with malignant tumors of the carotid. The mesenteric glands seem to be sarcomatous.

#### **5. Pathology of Experimental Exposure to High Oxygen Atmospheres, by H. T. Karsner.**

The present experiments were taken up to find, if possible, whether oxygen, under high pressure and variable length of exposure, exerts a detrimental influence upon the animal body. The question is an interesting one from the fact that divers and aviators make use of oxygen. It has been claimed that exposure to high oxygen atmospheres produces changes in the lung. Thus, in animals, it has been claimed that there is congestion and edema.

One of the difficulties which beset the workers was to determine what the normal animal was. Rabbits were the animals used. In a number of the rabbits, apparently healthy, some showed fatty degeneration of the heart, others interstitial myocarditis, others nephritis. Careful examination of all animals was made both before and after the experiment, to exclude all possible sources of error. Thus, urines were examined, blood counts made, et cetera.

Briefly, it was found that rabbits exposed to high atmospheres of oxygen, practically constant, for twenty-four hours, showed practically no pathologic changes in their tissues, especially the lungs. At the end of forty-eight hours, the changes found varied from congestion to fibrinous pneumonia. The changes at the end of seventy-two hours and four days were the same.

The hearts of the animals showed cloudy swelling and dilatation. The livers showed edema. The kidneys showed chronic interstitial nephritis, also a high fat content, the latter normal in these animals. There was also passive congestion. The spleen and lymph nodes showed phagocytosis of the erythrocytes and marked pigmentation. It is important to note, in conclusion, that at the end of the twenty-four-hour period the animals showed practically no changes. At the end of the forty-eight-hour period, however, practically all showed changes, as detailed above.

---

### **CLINICAL AND PATHOLOGICAL SECTION**

The regular meeting of this section was held in conjunction with the Charity Hospital Medical Society, at Charity Hospital, Friday, March 5, 1915, the chairman, F. C. Herrick, in the chair.

The regular program follows:

#### **1. A Stereoptican Clinic, by F. E. Bunts.**

##### **(a) Diffuse Hypertrophy of the Breast.**

The patient in this case showed an enormous hypertrophy of one breast, the increase in size being so great that the nipple was on a level with the waist line. On operation the greater part of the breast with a large part of the covering skin was removed, the nipple being allowed to remain. Hemorrhage was profuse, but the patient recovered without any sequelae. The nipple retracted up and regained the same level as

the one on the opposite side. It is interesting to note the enormous hypertrophy of the breasts which is found in natives of the South Sea Islands, and in other parts of the tropics.

(b) Abscess of the Breast.

The abscess in this case was subcutaneous.

(c) Advanced Carcinoma of the Breast.

The slide showed extensive involvement of the skin surface in advanced cancer of the breast. When the involvement of the skin is marked, operation is useless, except, perhaps, as a palliative measure. When the cancer first starts women notice the presence of a small nodule. This is often massaged either by the patients themselves, or by practitioners to whom the patients go for treatment. The practice is a pernicious one, and probably aids rapid extension.

(d) Paget's Disease.

The slide showed malignant involvement of the nipple and areola. The nipples in such cases are red, bleed readily, and are quite painful. The disease is probably malignant from the start, the early eczema which occurs being, probably, merely associated and not primary in the true sense.

(e) Pappilomatous Cyst of the Breast.

Palpation in these cases is often misleading. The cysts are often extremely tense, and the true nature of the process is often unsuspected. It is said that 10 per cent of these cysts become malignant. It is probable, however, that both follow the same process, as, for example, a chronic mastitis.

(f) Incision Used by the Speaker in Breast Amputations.

The slide showed the right angled incision used by the speaker in breast amputations. Beginning at the upper part of the anterior axillary fold, it is carried down and then across the chest toward the median line, almost at a right angle. This incision gives excellent results, with no subsequent impairment of motion.

(g) Hydronephrosis.

The case was one in which a diagnosis of hydrops of the gall bladder had been made. At operation, however, the gall bladder was found to be small and contracted, but the kidney was found to show a marked hydronephrosis and was removed.

(h) Gunshot Wound of the Kidney.

The case was one in which the bullet was found to have carried a piece of the clothing entirely through the anterior abdominal wall, and kidney, and lodged in the posterior abdominal wall. The kidney was removed, as was also the bullet and piece of cloth.

## 2. Presentation of Cases, by Secord H. Large.

(a) Atresia of the Pharynx.

The patient was a negro, male, of middle age, showing complete atresia from the soft palate to the pharynx. There was also atresia of the right side of the nose. No air could pass from the nose to the throat.

The patient denied syphilis, but his Wassermann had not been secured up to the present. It is planned to do a plastic operation on the case, making a new pharynx with mucus membrane taken from the inner side of the cheek. The operation will not be done until the Wassermann is secured, however, on the possibility that the phenomenon may be syphilitic.

(b) Resection of the Drum Membrane for Treatment.

The patient was a boy, aged 14, showing no abnormalities in his nose, but with large tonsils and adenoids. The membrana tympani was



retracted. Two-thirds of the left membrane was adherent to the wall of the middle ear. Hearing in this ear was greatly diminished.

At operation incisions were made in the anterior and posterior quadrants of the membrane. A right-angled knife was used to separate the adhesions. A strip of platinum and gold foil was then inserted to prevent the reformation of adhesions. Immediately after operation the patient had considerable pain and discharge. It was surprising to find that the platinum and gold acted as an irritant.

At the present time there is no pain, and the discharge has entirely ceased. The hearing in the ear is greatly improved, being now better than that in the other ear. In addition to preventing the reformation of adhesions, the strip of platinum and gold foil also acts, probably, as a sounding board.

(c) Chronic Discharge of the Middle Ear.

The patient, a young boy, had suffered from chronic discharge from the middle ear for a considerable period. He was operated on three weeks ago. The discharge has now entirely ceased and the wound has healed with only a slight scar.

Operation in such cases is important, since chronic discharge often leads to grave systemic and brain complications.

**3. Presentation of Cases, by F. C. Herrick.**

(a) A Case of Splenic Anemia.

The patient, a girl, aged 16, had had recurring gastric hemorrhages since the age of 11. The hemorrhages occurred at intervals of from three to six months, and were enormous in quantity, some of the clots being half as large as one's hand. The red blood count, after the hemorrhages, would fall as low as 2,000,000, or less. There was only little gastric distress and pain in the upper abdomen. In one of the attacks there was pain in the lower abdomen.

The patient had been sent to the hospital for ulcer. On physical examination the only findings were a spleen, slightly enlarged and barely palpable. On operation the only cause that could be found for the hemorrhages was the large spleen with a granular splenitis. The operation was performed a year ago.

During the past year the patient has had two hemorrhages. After the last hemorrhage coagulose was administered. The patient has not had a hemorrhage since September. She recently re-entered the hospital and shows at present all of the signs of the secondary stage of a splenic anemia.

On physical examination the patient shows a greatly enlarged spleen. The liver also shows enlargement. There is a jaundice of the sclera, free fluid in the abdomen is demonstrable, and the face and hands show a brownish pigmentation. The blood shows a pronounced lymphocytosis.

The terminal stage of the disease is the typical Banti's syndrome. The only efficient treatment for the former is splenectomy.

(b) A Probable Ovarian Pregnancy.

The patient, a woman, had had vomiting and pain in the abdomen six weeks from the time of her last menstrual period. Vaginal examination showed a small mass in the left side. On operation it appeared that a part of the left ovary had broken off, that portion constituting the mass. The remainder of the left ovary showed an abraded surface. This was stitched over. The case looks strongly like an ovarian pregnancy, although this cannot be proved. The condition is a rare one.

(c) A Case of Ectopic Pregnancy.

The patient had had her last period in May, 1914, following which all the signs of pregnancy developed. On October 2 she had a normal

period and another on December 25. The patient was first seen January 14, 1915. Vaginal examination showed a small, nodular tumor in the midline. There was also a mass on the left side.

At operation a fibroid uterus was found, also an unruptured ectopic pregnancy on the left side. The opposite side showed a pyosalpinx. A panhysterectomy was performed. The recovery was uneventful.

#### **4. Presentation of Cases, by C. A. Hamann.**

##### **(a) A Case of Peritonitis Deformans.**

The patient, a girl, aged 16, applied to a physician, complaining of abdominal pain and constipation. Cathartics were effective, and when used the patient passed great masses of feces. An abdominal tumor was palpable, and the diagnosis of ovarian cyst was made.

On operation, a tumor was found, but none of the intestines, large or small, were visible except a part of the cecum and the appendix. The great bulk of the intestines were found to be surrounded by a smooth, serous covering, the encapsulated mass constituting the tumor. The membrane was partly picked off, but the coils of intestine were not separated. A small amount of ascitic fluid was present. The condition has been called by some writers peritonitis chronica encapsulata, and is not tuberculous.

##### **(b) A Case of Aneurism of the Innominate Artery.**

The case was one in which the innominate and common carotid arteries were involved. Pulsation was demonstrable in the supra-sternal notch and to the right. An incision was made and one-half of the clavicle resected. A fusiform aneurism of the innominate and common carotid arteries was found, much smaller than expected. The innominate artery was ligated on the cardiac side and the common carotid was also tied off.

Following the operation, hemiplegia developed and the patient died ten hours later. Death was undoubtedly due to disturbance of the cerebral circulation, the remaining vessels being incapable of maintaining a competent circulation.

##### **(c) Tuberculosis of the Breast.**

The condition is an extremely rare one. It occurred in a young woman, aged 20. The first thing noticed was a chronic swelling which contained fluid. This was aspirated and typical tuberculous pus secured. The wound failed to heal and a sinus developed. The condition was treated by complete amputation of the breast. The patient made an uninterrupted recovery.

##### **(d) A Case of Plexiform Neuroma.**

The patient was a young woman, who came in complaining of a swelling of the index finger. The swelling was soft on palpation. The possible conditions which were considered in diagnosis were, fatty tumor, ganglion or hypertrophy. A diagnosis of ganglion was made.

On operation the mass was found to be a fibro-lipomatous tumor situated about the digital nerve. On microscopic examination it was found to contain nervous tissue.

##### **(e) A Lipoma of Unusual Situation.**

The patient, a man, came in complaining of a mass situated on the thenar eminence. He attributed it to repeated traumatism, which he had received from a machine on which he was working. The mass was neither painful nor did the skin show discoloration. The mass was thought to be either a cystic tumor or a lipoma. On operation the diagnosis of lipoma was confirmed. The unusual situation of the tumor was the interesting feature.



## 5. Cases Presented, by H. A. Schlink.

### (a) A Case of Essential Renal Hemorrhage.

The patient was a woman aged 51. She complained of pain in the lumbar region when getting up or sitting down. Her urine showed the presence of bright red blood in large quantities. The urine also showed a slight trace of albumin, but no more than might be accounted for by the presence of blood cells. Cystoscopic examination showed the bladder to be normal. Ureteral examination showed a normal flow from the right kidney, but none from the left. The excretion of phenolsulphophtallic acid was 22, in two specimens from the right kidney, while the left showed only a trace.

The left kidney was removed. It showed a small fibroma, evidences of a subacute parenchymatous nephritis and minute hemorrhages at various points throughout it.

F. C. Bunts, in discussion, said that this was the third of three cases which he had operated for essential renal hemorrhage. In the other two cases a nephrotomy was done. The kidney, in these cases, was split longitudinally and then sewed back together. There was a copious hemorrhage following the operation, but both of the patients made good recoveries. The prevailing impression at the present time is that nephrectomy is better in these cases than nephrotomy.

C. E. Briggs, in discussion, cited a case of essential hemorrhage which he operated ten years ago. The patient had had hemorrhages for two years with such systemic effect that a diagnosis of tuberculosis had been made.

On operation the kidney was bisected, the capsule stretched and then both reunited. The hemorrhage cleared up in thirty-six hours and the patient has had no trouble since. These cases have a definite pathological basis, although the latter is indefinite. In some cases merely cutting down and manipulating the kidney, or stretching the capsule, or decapsulating, has resulted in a cure. When these measures are curative it is hard to convince one's self of the advisability of nephrectomy.

F. C. Herrick, in discussion, said that one case which he had had, convinced him of the wisdom of nephrectomy. On removal the kidney looked to be perfect, and removal seemed really unjustifiable. On pathological examination, however, a definite naevus was found in the kidney pelvis.

### (b) A Case of Gastroenterostomy.

The patient had a large soft ulcer below the pylorus. The treatment in the case was operation with plication of the pylorus and a posterior gastroenterostomy. The symptoms which the patient had were the usual ones and recovery was uneventful.

### (c) A Case of Melano Sarcoma.

The first signs of the disease was in April, 1912, when a nodule appeared on the plantar surface of the left small toe. The toe was removed and a diagnosis of melano sarcoma was made. In 1913 a similar nodule appeared on the upper surface of the third toe. Another operation was performed and the third toe, together with the second toe, which was also involved, was removed. Some time later two similar lumps appeared in the left groin. These were removed. The masses in the groin later returned and the X-ray was then employed to halt their progress. In spite of the treatment, the lumps became larger and an abscess formed. This was aspirated and pus and an inky fluid secured.

The surface skin over the masses sloughed and showed no signs of healing. The X-ray treatment seemed to halt the progress of the growth to some extent, but on the other hand it increased the inflammation.

Coley's toxins was then tried and the case showed immediate improvement. After the dose had been pushed to the point where a reaction

was secured, the change in the appearance of the area was marked. After the first supply of the toxins had been used up some difficulty was experienced in securing a second supply. During this period, while the patient was of necessity kept off of the toxins, the area became markedly worse. When another supply was secured and the toxins again administered, improvement began again.

F. E. Bunts, in opening the discussion, said that he had always considered the melano sarcoma to be the most malignant of tumors. The present case was given a very unfavorable prognosis for that reason. Whether a coincidence or not, the case showed immediate improvement when put on Coley's toxins and immediately became worse when the use of the toxins was temporarily discontinued. This is the first case in the speaker's experience in which beneficial results have followed the use of Coley's toxins.

C. E. Briggs cited a case of a small child with melano sarcoma of the lower lip. The patient was treated at Lakeside. The involved area was removed and the involved glands, on the same side as the growth dissected out. An unfavorable prognosis was given, but in the two years that have elapsed since operation, the growth has shown no tendency to recur.

---

## THE OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The seventy-seventh regular meeting of the section was held Friday, February 26, 1915, at 8:00 P. M., at the Cleveland Medical Library.

The meeting was called to order at 8:30 P. M., the chairman, J. E. Cogan, in the chair.

The minutes of the last meeting were read and approved.

### PROGRAM

1. Doctor Cogan presented a patient who had suffered with severe trachoma. This man disappeared from the clinic about a year ago and had just recently returned. At present he has very marked argyrosis of cornea and conjunctiva. This was not present a year ago. The patient states that he had been using argyrol 50 per cent in the eyes since discontinuing the clinic, and had used no other drug. Doctor Cogan has another patient showing a similar condition from the same drug.

These were brought in to show that, in spite of the claim of manufacturers, argyrosis can be produced by any organic silver salt, as well as the inorganic salt. Doctor Cogan also stated that when protargol first came out he saw a man presenting argyrosis from its use.

Doctor Cogan also presented a young adult with Fuch's coloboma.

2. A. E. Ibershoff showed a young woman with a healed conglobate tubercle of the choroid, treated with Koch's old tuberculin.

Patient, a young woman, apparently in good health, family history good, was first seen in May, 1914, on account of failing vision in right eye. No external signs of ocular disease. Ophthalmoscope showed a pale bloodless tumor above and involving macula, with numerous small daughter areas below. The main tumor was somewhat smaller than the disc, and its surface elevated 1 m.m. above the level of the retina, this elevation being sufficient to cause a drawing or stretching of retina below into slight radial folds. Urinalysis negative, Wassermann negative. Patient sent to hospital for observation. One milligram of tuberculin was injected hypodermically. No febrile reaction followed, but on the third day two of the small daughter areas began to disappear. Diagnosis of Conglobate Tubercle of the Choroid made and patient put on graduated doses of tuberculin, beginning with one-tenth milligram and increasing to ten milligrams. In five months all daughter areas were



healed, vision improved, parent tumor smaller and shrunken, patient gained in weight, and a goitre for which she had previously been treating without results entirely disappeared.

3. M. G. Kochmit showed a boy of five years with double congenital cataract—counts fingers at one meter. The lenses showed very distinctly the three primary divisions in their formation.

4. W. C. Tuckerman showed a man of about thirty years with marked, rapidly developing intestinal keratitis. About three weeks ago, when first seen, the patient showed a localized episcleritis in both eyes opposite the palpable fissure near the sclero-corneal junction. The largest patch was external on the left eye and the adjacent cornea had a few faint opacities.

Within a week the entire cornea of the left eye was opaque, and one week later the other cornea began to become opaque. At present it is fairly opaque. The patient's history and physical findings are negative in other respects. Wassermann not taken.

5. W. E. Bruner showed a specimen of melano-sarcoma of the choroid. The diagnosis of tumor was not difficult. When first seen by Doctor Bruner the lens and vitreous were such that a clear view of the back of the eye could not be made out, but by transillumination the tumor mass could be distinctly outlined. From the specimen, the tumor appears entirely confined to the eyeball.

#### DISCUSSION

W. E. Bruner advised needling the congenital cataract, one eye at a time. Said that the sooner done the better. He remarked that he was surprised to find quite often that oculists failed to put bifocals on the aphakic eyes of children, and at the same time were surprised that their near vision did not improve more rapidly after the removal of the cataract.

With regard to Doctor Tuckerman's patient, he advised a Wassermann before making the diagnosis absolute.

In regard to Doctor Ibershoff's patient, he stated that in tubercle of the retina the second or third dose of tuberculin often had to be given before a positive tuberculin reaction appeared.

6. Doctor W. H. Perry reported two interesting cases of ethmoiditis:

(a) A chronic ethmoiditis in which the only symptom was severe periodic headaches for twenty years.

(b) A case of ethmoiditis in which attacks of sneezing continuously for eight or ten hours, until the patient was exhausted, was the sole symptom.

Paper discussed by Doctors W. E. Bruner and W. H. Tuckerman.

Members present were Doctors Cogan, W. H. Tuckerman, W. C. Tuckerman, Perry, Bruner, Stuart, Kochmit, Monson, Ibershoff, Knowlton and Hill, of Canton.

The seventy-eighth regular meeting of the section was held Friday, March 26, 1915, at 8:00 P. M., at the Cleveland Medical Library.

The meeting was called to order at 8:30 P. M., the chairman, Doctor J. E. Cogan, in the chair.

The minutes of the last meeting were read and approved as corrected.

R. M. Manley read his paper upon "Canthoplasty for the Relief of Corneal and Conjunctival Affections." The paper brought forth but little discussion, as none of the other members had had any experience with the procedure, except Doctor Cogan, who had only used it in two cases.

#### 1. Canthoplasty for the Relief of Otherwise Incurable Affections of the Cornea and Conjunctiva.

Man as a race or as a group of individuals has ever been loth to accept the truth.

It is to be hoped that judgment will not be passed upon the usefulness of canthoplasty for certain ailments about to be described without serious consideration.

So, also, the individual has ever been prone to exaggerate the importance of his favorite method of procedure, and may your criticism be as severe as your consideration is serious.

A very limited number of cases of trachoma, progressive conical cornea, granular lids with keratitis, chronic catarrhal conjunctivitis with corneal complications and vernal catarrh resist all manner of treatment; the best outlook with medical attention only; being a long period of treatment and the worst for ultimate loss of all useful vision. Fortunately, these cases are not common, but the suffering that occurs with the few warrants every means being taken to prevent their occurrence or to minimize the suffering.

Relief from pain and the more aggravating symptoms may be had in such cases through the use of a canthoplastic operation, this procedure at the same time improving vision; the degree of improvement depending upon the stage of the disease at the time operative interference was obtainable.

Inability of a patient to perform useful labor; pain from months or years of pressure of a granular or trachomatous lid upon a chronically inflamed or ulcerated eyeball, or the constant photophobia and lachrymation of such an eye, does not tend to make an optimist of the sufferer, and relief from this almost intolerable condition makes one of the most grateful patients that may be found in the practice of ophthalmology.

The operation to be recommended for the relief of this class of afflictions consists in a thorough division of the outer canthal angle; the conjunctiva, skin, muscle and ligament being severed by one strong snip of blunt-pointed scissors in a direction opposite to the slit between the closed lids, and, in length, the depth of the external cul de sac.

The upper canthal ligament or band of connective tissue should be cut close to the inner end of the incision through the external angle by stretching the upper lid up and toward the nose and inserting the blunt points of small scissors between the skin and conjunctiva, astride the canthal ligament at the open edge of the wound.

This cut is very important to the success of the operation and should be made at right angles to the primary incision.

Entropion cannot occur from division of this upper canthal ligament, but might were the lower so treated.

The conjunctiva is stitched to the skin by pulling it to the very point of the newly-made angle, slightly undermining the conjunctiva if necessary.

A thoroughly good bite of skin as well as conjunctiva is essential to keep the sutures from cutting through the delicate tissue before union is complete.

Care should be taken to draw conjunctiva well into the angle, past its original position and to obtain as nearly as possible a U-shaped angle to replace the former V-shaped one, as the U-shaped canthus tends to allow the greatest play of the lids over the eyeball, while still performing all useful functions.

The looseness of the upper lid depends upon the increase in width of the new commissure over that of the old, and upon this looseness remaining permanent hinges the ultimate success of the operation.

The sutures of heavy silk positively must remain intact six days.

General anesthesia is seldom necessary.

A few drops of cocaine injected subconjunctivally and subcutaneously will render the operation nearly painless if care be taken to anesthetize an area as far as the sutures are to be applied.

The sutures will care for any hemorrhage, but if spurting interferes with the operation, pressure by an assistant will care for it until the sutures are applied.



The scar following is negligible.

With a slight difference in detail, C. R. Agnew has performed canthoplastic operations for the relief of granular lids, pannus, keratitis, conjunctivitis and corneal ulcers and reported one hundred and seventy-five such cases in 1875.

Since that time the operation has been used for the relief of some of these afflictions, also for the relief of trachoma, but to a far less extent than its merit would warrant.

Doctor Vail, of Cincinnati, reports having divided the canthal ligament to promote union of the corneal incision following cataract extraction. The writer has twice opened the canthal angle for this purpose, with very favorable results, and while the purpose in operating is the same as in those cases where permanent enlargement of the canthal angle is desired, they belong rather with the class where canthotomy only is necessary and not a plastic operation.

Canthotomy for the temporary relief of ophthalmia belongs in the same category. Permanent change in the shape of the canthal angle is unnecessary in such cases.

The writer has twice performed the canthoplastic operation heretofore described for the relief of ulcerated conical cornea, with immediate healing of the ulcers and improvement of vision.

Twice for the relief of vernal conjunctivitis, resulting in a complete cure after years of persistent treatment had made no progress against the disease.

In these cases the growths were stripped from the lids in narrow strips the entire length of the lids, at intervals of several months, until the lid surfaces were smooth. No recurrence in over two years.

Six times for the relief of pannus, all of which recovered within a few weeks after the time of operating.

Six times for corneal ulcers, with healing of the ulcers and improvement in vision in all cases.

Three times for the relief of chronic catarrhal conjunctivitis, without permanent relief. Medical treatment was necessary at a later date in all three cases. The temporary result was good.

Eight times in cases of keratitis, three of which obtained no improvement in vision, owing to the stage of the disease at which time operative interference was accepted; two had improvement in vision and three obtained normal vision.

All eight obtained immediate, permanent relief from the other aggravating symptoms.

Five times for the relief of trachoma, all of which returned to work within a short time following and had no further medical treatment except an alum stick applied at home.

The cases in which the use of the operation would be urged are those intractable diseases of the cornea and conjunctiva that require months and even years to relieve by any medical treatment, and which by the time relief has been obtained are so scarred as to permanently destroy the useful vision of the eyes.

Under this head would be included: trachoma; granular lids with periodic, ulcerative keratitis; chronic keratitis that will not yield to other methods of treatment; periodic corneal ulceration; chronic, catarrhal conjunctivitis with corneal complications; progressive conical cornea, and, with a slightly different method of procedure, vernal conjunctivitis.

Likewise those of the above where pain or inability to work produces a real hardship.

Still greater emphasis should be made for its use in cases where immediate loss of sight is imminent, as in corneal ulcer, complicating trachoma or conical cornea.

In the former class of cases operative interference may be advised

at any time, but in the latter immediate operation is necessary to relieve the condition while sufficient clear corneal tissue remains to enable the patient to retain useful vision.

To one who has never performed the operation for the relief of any of the above conditions, canthoplasty may, at first thought, seem to be the remedy for a great variety of afflictions, but upon second thought it will be seen that there exists a certain similarity in all of these conditions regarding their relation to the canthus, and that pressure of an overly tight-fitting lid may be harmful in any of them; in fact, may actually be the underlying cause, especially of the severity of the symptoms. Free bleeding from the canthal angle may of itself have an immediate beneficial effect.

The immediate healing of the cornea, following removal of the extreme pressure of the tight lid, or perhaps even more important, the relief of the spasm of the lid muscle is sure to follow the removal of the sutures, if not the opening of the canthus.

Brief report of a complicated case:

Male. Age, 24.

History of having had trachoma for fourteen years, during which time the eyes had been under constant treatment by different physicians. Had been unable to work for past six months.

Excepting the eyes, the general health was splendid except for a slight aortic insufficiency.

Vision of the right eye= $20/100$ .

Vision of the left eye= $20/200$ .

Both eyes had corneal ulcers.

Left cornea bulging nearly to the point of perforation at the site of the ulcer, but this was not central.

Left anterior chamber contained pus.

Each eye had a dense pannus.

The lids were in a terrible condition from the trachoma, as well as from the frequent burnings they had been subjected to for a long period.

Palpebral fissures small and the canthal angles extremely tight.

A double canthoplasty operation was performed February 16, 1914.

The sutures were left intact seven days. In hospital two weeks.

The ulcers began to heal immediately upon removal of the sutures.

The pannus soon cleared and treatment was discontinued five weeks from the time of operation, at which time the vision of each eye was as follows:

O. D. V.= $20/50$ .

O. S. V.= $20/30+2$ .

Patient returned to work one week later.

In June no pannus or keratitis remained. Scars were present at the sites of the ulcers, but these had not been central.

The only treatment given after the fifth week following the canthoplasty was alum stick applied to the inner surface of the lids at home, once daily until October, 1914, at which time the lids were smooth and loose.

March, 1915, the vision was, right eye,  $20/30-1$ ; left,  $20/30+3$ .

Conclusion. The canthoplasty operation described is most effective in those diseases of the cornea that are most disastrous to the eye.

Its use in trachoma with corneal complications has given the most gratifying results.

From the nature of the operation it is readily seen that it is of the greatest value where the roughness and tightness of the lid surfaces are the prime factors as the cause of the corneal disturbance.

Corneal ulcers from such causes yield immediately, but ulcers of traumatic origin are not much benefited by canthoplasties.

Deep keratitis, where the connective tissue layer is mainly the seat of the disease, is the least promising of any of the above mentioned conditions, and while canthoplasty may cure a case of keratitis of constitu-



tional origin that would otherwise have been incurable, it will not, of course, prevent the formation of scar tissue in the connective tissue already inflamed, nor is its curative effect rapid enough in deep keratitis of constitutional origin to prevent diminution of vision even after operation.

Pannus yields almost immediately to this operation.

Chronic catarrhal conjunctivitis treated in this manner gives immediate results and apparently promise of a cure, but later the patient returns for further medical treatment, relieved but not cured.

It is the writer's belief that spasm of the obicularis is in a manner similar to pyloric spasm and to spasm of other muscles arranged in somewhat the same formation, but in spasm of the obicularis one may relieve such spasm temporarily by canthotomy or permanently by canthoplasty.

2. S. S. Quittner reported two cases of optic nerve atrophy.

3. Leo Wolfenstein's patients failing to appear, he simply made a report of the cases.

One was a woman with heterochromia of the iris. The right eye gave a history of gradually failing vision. The woman consulted with opticians for some time, so we have only the patient's statement for the original condition and vision.

The second case was a boy, fourteen years of age, who had iritis of the left eye with left-sided facial paralysis. This was repeated three weeks later on the other side and later there was a relapse on the first side. Wassermann, von Pirquet, temperature and pulse all negative.

4. W. H. Tuckerman was absent and his paper was not read.

J. E. Cogan made a statement with regard to the attitude of the Health Board on making reports on microscopic slides and showed the outfit furnished by the city. He stated that the Health authorities would make a statement as to the physical characters of the microorganisms, shown in the slides, but that the physician must make his own diagnosis, because to be able to make a diagnosis definite would require making cultures and incubation, which the city is not prepared to do. For instance, the Board would report the finding of Gram-negative diplococci. The physician could suit his own fancy as to whether he called them gonococci or not.

Doctor Cogan suggested the acquiring of a light. Upon motion of Doctor Bruner, this suggestion was adopted, the Secretary was instructed to purchase a suitable light and collect the cost from the members.

Members present were Doctors Cogan, W. C. Tuckerman, Monson, Quittner, Manley, Wolfenstein, Bruner, and Kern.

### COUNCIL MEETING

At a meeting of the Council of the Academy of Medicine, held Wednesday, March 10, 1915, at the Bismarck, the following members were present: The President, Doctor C. F. Hoover, in the chair; Doctors Moorehouse, Way, Sawyer, Webster, Taylor, Perkins, Ford, Thomas, Lichty, Storey, Weir, Houck and Tuckerman.

The minutes of the last meeting of the Council were read and approved.

On motion of Doctor Sawyer, Doctors Hoover and C. F. Ford were requested by the Council to present to the next meeting of the Academy the subject of medical licensure, with a view to having an expression of opinion by the Academy as to which form of licensure they would endorse; whether the definitive or the restrictive plan.

On motion the following were elected to active membership: A. M. Baldwin, Paul E. Beach, Chas. Howard Bee, Walter B. Bucher, Edward M. Deacon, E. P. Edwards, Thos. Gruber, H. E. Mitchell, Frank H. Mohrman, Wm. E. Hussun, Fred C. Oldenburg, F. A. Rice, Arthur E. Robertson, Eugene D. Rosewater, R. G. Schnee, J. S. Wimer.

On motion, the following was elected to associate membership in the Veterinary Section: Mihaly Borsus, V. S.

On motion, Doctor A. F. Irwin, formerly of the Minnesota State Medical Society, was transferred to active membership.

The names of the following applicants for active membership were ordered published: Frederick C. Curtis, J. W. Epstein.

The application of R. P. Beggs was laid on the table.

On motion, the bond of the Secretary-Treasurer was ordered renewed.

Doctor Rixford D. Way asked for an endorsement of the stand of the Veterinary Section on the licensure of veterinarians. The following resolution was passed:

The Council of the Academy of Medicine of Cleveland approves the provisions of Senate Bill No. 42, Sections 1177-16 to 1177-21 (inclusive), relating to the regulation of the practice of veterinary medicine.

The Council believes that adequate preliminary education should be required of the applicant for examination and that it would jeopardize the health interests of the state to open the registry of veterinarians for the purpose of licensing without proper examination.

### THE LAKESIDE HOSPITAL MEDICAL SOCIETY

The regular meetings of the Lakeside Medical Society was held at Lakeside Hospital, Friday, March 24, 1915, the chairman, H. O. Ruh, in the chair.

The regular program follows:

#### 1. Presentations of a Case of Paroxysmal Tachycardia, by M. A. Blankenhorn.

The patient, a young man employed as an usher, had been in the hospital a number of times previous with the same complaint, rapid heart rate and fever. At the time of a former admission the pulse rate was 230, the temperature 101. Except for the excessive rate the pulse was otherwise normal. The heart was found to be dilated both to the right and to the left. The fever persisted. The patient was made toxic on salicylates. There was no resultant effect on the pulse rate, but the temperature fell to normal. It was further found on physical examination that the patient had a consolidation of the left apex. The left lung also showed a diminished mobility. For these reasons, it was thought at the time that the tachycardia was probably associated with tuberculosis. Later, with the administration of stropanthus, the pulse rate fell.

The patient suffered subsequent attacks, and was admitted to the hospital at these times, the symptoms and physical findings remaining the same. One of the interesting features of the case was that the man, though suffering during the attacks from a very high heart rate, was able during a part of the time to continue his fairly strenuous work as usher.

At the time of the present admission the symptoms and physical findings were as before. The observation was made, however, that despite the fact that the present admission was over a year after his first admission, the condition diagnosed in the left lung as tuberculosis had made no advance, whatsoever. This fact was held to be inconsistent with the conception of an active tuberculous process in the lung, and certainly seemed to rule out tuberculosis as the etiological factor in the tachycardia.

The possibility of trachycardia being due to a luetic involvement was then seriously considered. To support the view that the process was luetic was the continued mild fever over a long period of time, and also the observation, made during one stay at the hospital, that the apex and radial beats at one time alternated, thus suggesting a syphilitic interference with conduction.

The man was accordingly put upon injections of hydrargium. At the time of the reporting of the case the patient had received nine such



injections, without any perceptible influence on the tachycardia. During the present illness, stropanthus has also been given, without the desired result. The etiology of the tachycardia is thus unproven.

## **2. Presentation of a Case of Bulbar Palsy, by V. C. Rowland.**

The patient, an elderly man, first showed an impairment of articulation. Following were noticed lack of tone in the cheek muscles, collection of food between teeth and cheeks, due to muscular weakness and inability to control the bolus, and later difficulty in swallowing. There is also complete paralysis and anesthesia of the palate and anesthesia of the pharynx.

The occurrence in an individual of this age speaks against the condition being a primary spinal atrophy. A lumbar puncture showed only three or four cells per cubic millimeter. This excludes a luetic process. The patient shows a generalized arteriosclerosis. The condition is probably secondary to vascular changes.

## **3. Presentation of a Case of Edema Following Erysipelas, by V. C. Rowland.**

The patient had suffered repeated attacks of erysipelas. He showed, following these, permanent edema of one hand, both legs, and the tissues about one eye. The patient's cardio-vascular and renal systems are normal. The case seems to be that of an edema following erysipelas, a condition rarely encountered.

The only reference to cases of this kind in the literature was made by Sir Johnathan Hutchison, some years ago. He describes a persistent edema about the eyes, following erysipelas, as being fairly common.

The patient at the present time shows an eosinophilia of twenty-eight per cent. This is puzzling to explain. Examination of the stools failed to show any parasitic ova.

H. N. Cole, in discussion, pointed out that edema following lupus of the skin is quite common, especially about the legs.

H. O. Ruh called attention to the case of a boy, who had been demonstrated at City Hospital. The lad showed a permanent edema about the nose, following numerous attacks of erysipelas.

## **4. Presentation of a Case of Myasthenia Gravis, by C. D. Cristy.**

The patient, a young boy, entered the hospital on February 8, complaining of inability to see and to swallow. He had been staying at the Hudson Industrial School until August. The present illness dated from January 1, when the boy said that he began to have difficulty in seeing and swallowing. If he tried to swallow liquids they would come out through the nose.

Later, he found that he was unable to chew his food. His jaw would become very tired after chewing a while and he was obliged to support it with his hand to aid in the chewing movements. The boy also complained of some disturbances of hearing in the right ear at intervals, but these were indefinite. It is interesting to note that on admission to the hospital the lad showed mild choreiform movements, which at first suggested that chorea was his real trouble.

On physical examination the patient showed ptosis of both eyelids, and failure of the left eye to converge. The face was absolutely without expression. He was able to sit up in bed only with difficulty. At present this difficulty is increased. It was found that the muscles in all parts of the body, when called into activity, tired very easily. This latter finding is even more pronounced at present than it was on entrance. The muscles also showed a typical myasthenic reaction to electrical stimuli, being soon exhausted.

A section was taken from the muscles, to learn something of the pathology of the disease, if possible. Up to the present, little has been known. It is found that the muscles in such cases show a marked lymphocytic infiltration, but this is all.

Various theories have been advanced to account for the disease. One, that it is due to disease of the thymus, another that it is due to a hyperthyroidism, still another that hepatic insufficiency is the basis of the trouble. The real cause is probably disturbance in the metabolism of the muscle. It has been demonstrated that there is a disturbance in the production and excretion of creatinin and also failure of the body to utilize calcium. The disease shows quite a tendency to remissions. One case on record lasted eighteen years. Another lasted only a week. The eye and ear disturbances in these cases are due to weakness of the associated muscles.

C. F. Hoover, in discussion, called attention to the fact that in cases of this sort the reflex arc is intact, as demonstrated by electrical stimulation. Exhaustion easily occurs, however. Where does the exhaustion occur? Is the trouble in the cortex, cord or muscle endings? Since the muscle exhausts promptly with electrical stimulation, we can eliminate the cortex and the cord as possible sites of exhaustion. The point of exhaustion must be where the nerve fiber enters the muscle. This fact has never been demonstrated experimentally. Histological examination might show it. Failure to demonstrate the fact histologically would not be proof against the occurrence of physiological breakdown.

#### **5. Presentation of a Case of Luetic Diplegia Facialis, by E. B. Wood.**

Patient was a Hungarian, of middle age, very well developed and well nourished. The first manifestation of the trouble was severe headache, especially on the right, in the region posterior to the ear. One morning the patient awoke to find all of the muscles on the right side of the face paralyzed. The paralysis, at first partial, later became complete. Three or four days later paralysis of the left side of the face was noticed. The headache grew progressively worse.

Physical examination on entrance to the hospital showed slight nystagmus of the eyes, to the left. The sensations were nowhere disturbed. Taste was absent over the anterior two-thirds of the tongue. Lumbar puncture showed the spinal fluid to contain sixty cells per cubic millimeter. The Wassermann reaction was triple positive. The reflexes were all normal and there was no ataxia.

C. F. Hoover, in discussion, remarked that the pathology of this case consisted of an inflammatory process of the dura, which accounted for the headaches. The same process accounted for catching the facial nerves, the point of involvement being probably at the point of emergence from the Fallopian canal. The patient shows no reaction of degeneration. The prognosis for functional improvement in the structures effected is, therefore, not good, even though the syphilis causing the involvement is cured.

#### **6. Presentation of a Case of Carcinoma Appearing on a Gumma of the Skin, by M. P. Springer.**

The patient had no luetic history, but gave a positive Wassermann. The lesion, situated upon the back, began with a small pimple, which became progressively larger, ulcerated, and showed no tendency to healing. The original lesion was interpreted as a gumma, while a formation in the center was diagnosed as a carcinoma. Contrary to expectations, however, pathological examination of the tissues showed the entire mass to be malignant.

C. F. Hoover called attention to the fact that the edges were not undermined and looked more like those of a malignant growth than like a gumma.

#### **7. Presentation of a Case of Pleurisy, by M. A. Blankenhorn.**

The patient, a middle aged man, was admitted to the hospital February 15, complaining of pain and shortness of breath. His temperature



on entrance was 102. Physical examination showed the characteristic findings of pleurisy with effusion. A paracentesis of the pleural sacs was done, four hundred and fifty c.c. of fluid being removed. Chemical and microscopical tests showed the fluid to have the characteristics of an exudate. All of the cells were mononuclear. The effusion was thought to be tubercular. The temperature persisted.

A week later one liter of fluid was drawn off. Three days after this paracentesis a friction rub appeared at the right base. The temperature came to normal. The friction rub was both audible and palpable and persisted. The patient complained of little pain. Persistence of the friction rub was puzzling. A third paracentesis was done and one hundred c.c. of fluid secured, of the same character as that previously obtained.

The patient has a history of a primary sore some years ago, when he was in the Austrian army. He was treated at that time by inunctions. The marital history is good. The Wassermann reaction was positive in the case. The patient was put on mercury until salivated. At the end of this period the friction rub was even more intense than formerly. It has since, however, slowly subsided. The temperature has remained down.

C. F. Hoover, in discussion, pointed out that a loud friction rub, with little pain and no fluid, is suggestive of lues.

#### 8. Presentation of Pathological Material, by R. G. Hoffman.

Case 1. This was the case of a woman who entered the hospital complaining of abdominal pain, cramp-like in character, and nausea and vomiting. She had three such attacks before entrance. Intestinal obstruction was diagnosed and the patient operated. At operation it was found that the obstruction was due to hernia, which was irreducible. An end to end anastomosis was done to relieve the obstruction and the wound closed. The patient died. At autopsy the condition was found to be an obturator hernia. The sac was large, contained a considerable amount of gut, which was firmly adherent and irreducible.

Case 2. Occurred in a woman, aged 33. Her history was that five weeks ago she had taken a severe cold. Two weeks ago her legs became swollen, appetite was gone, bowels were constipated, and she had a dull pain in the abdomen, which assumed a sharp, stabbing character in the right lower quadrant.

On physical examination the abdomen was found to be distended, legs edematous, fluid both in the pleural sacs and abdominal cavity. Paracentesis was done, five liters of fluid being secured from the abdomen, two hundred c.c. from the pleural cavity. On examination the fluid was found to contain many white blood cells, mostly mononuclear, much albumin, clotting time five to ten minutes.

A mass was palpable lying transversely across the abdomen and seemingly continuous with the liver. The temperature ranged between 102 and 104.

At autopsy the case was found to be one of tuberculous peritonitis, various portions of the gut being studded with tubercles.

Case 3. The patient was a woman, aged 50, who, until a month ago, had been in good health. At that time she became ill, with headache and fever. The condition was diagnosed influenza. Then, she began to suffer extreme pain in the arms and legs. The condition was diagnosed by another physician as rheumatism. Later, pain in the back, neck and arms developed, and a third physician diagnosed typhoid fever.

On admission to the hospital the patient was in a semi-comatose state. She showed the Kernig sign on both sides. On the right knee and ankle, jerks were absent. Autopsy showed a large hemorrhage into the anterior pole of the brain.

## ROSTER OF OFFICERS AND MEMBERS OF THE ACADEMY OF MEDICINE OF CLEVELAND FOR 1915

The list published below includes only those whose dues were received by the Secretary-Treasurer up to April 1st. Errors in name or address should be reported to J. E. Tuckerman, 733 Osborn Building, at once to aid in prompt correction.

This list as published constitutes the mailing list of The Journal, and any active member failing to receive his Journal is requested to write for a copy. No name has been intentionally omitted. If your name does not appear, kindly notify the Secretary.

### Officers

#### Members of Council

##### President

C. F. HOOVER, M. D., 1915

##### First Vice President

M. J. LICHTY, M. D., 1915

##### Second Vice President

W. H. WEIR, M. D., 1915

##### Ex-Presidents

J. J. THOMAS, M. D., 1914

H. L. SANFORD, M. D., 1913

##### Secretary-Treasurer

J. E. TUCKERMAN, M. D., 1912, 1913, 1914, 1915

##### Chairmen of Sections

S. J. WEBSTER, M. D., Clinical and Pathological

T. WINGATE TODD, F. R. C. S.,

Experimental Medicine

J. E. COGAN, M. D.,

Ophthalmological and Oto-Laryngological

E. R. SELZER, Ph. G., Medico-Pharmaceutical

RIXFORD D. WAY, V. S., Veterinary

##### Chairmen of Standing Committees

C. E. FORD, M. D., Legislative

R. G. PERKINS, M. D., Public Health

ALVIN S. STOREY, M. D., Civic

G. W. MOOREHOUSE, M. D., Membership

LESTER TAYLOR, M. D., Program

##### Trustees

G. E. FOLLANSBEE, M. D., 1913, 1914, 1915

N. C. YARIAN, M. D., 1913, 1914, 1915

R. E. SKEEL, M. D., 1914, 1915, 1916

E. O. HOUCK, M. D., 1914, 1915, 1916

J. P. SAWYER, M. D., 1915, 1916, 1917

W. H. HUMISTON, M. D., 1915, 1916, 1917

### Standing Committees

#### Legislative Committee

C. E. FORD, M. D.

F. C. WAITE, Ph. D.

R. E. SKEEL, M. D.

C. W. EDDY, V. S.

One appointment held open for special work,  
by permission of the Council.

#### Committee on Public Health

R. G. PERKINS, M. D.

J. J. R. MACLEOD, M. D.

W. H. MERRIAM, M. D.

E. F. ROMIG, M. D.

J. C. PLACAK, M. D.



**Standing Committees—Continued****Civic Committee**

ALVIN S. STOREY, M. D.  
W. J. BENNER, M. D.

One appointment held open for special work,  
by permission of the Council.

**Membership Committee**

G. W. MOOREHOUSE, M. D.  
W. J. ABBOTT, M. D.  
W. A. MEDLIN, M. D.  
W. A. SCHLESINGER, M. D.  
J. M. MOORE, M. D.  
W. J. MANNING, M. D.  
F. W. HITCHINGS, M. D.

**Program Committee**

LESTER TAYLOR, M. D.  
H. O. RUH, M. D.  
PAUL J. HANZLIK, M. D.  
W. H. TUCKERMAN, M. D.  
W. P. ALPERS, Sc. D.  
SAMUEL BURROWS, V. S.

**Secretaries of Sections**

H. O. RUH, M. D., Clinical and Pathological

PAUL J. HANZLIK, M. D.,

Experimental Medicine

W. H. TUCKERMAN, M. D.,

Ophthalmological and Oto-Laryngological

WM. P. ALPERS, Medico-Pharmaceutical

SAMUEL BURROWS, V. S., Veterinary

**Honorary Members**

Cabot, Richard C.....190 Marlboro St., Boston, Mass.  
Hanna, H. M.....2417 Prospect Ave., Cleveland, O.  
Howard, W. T.....Metacomet, Westerly, R. I.  
Moynihan, B. G.....Leeds, England  
Ochsner, A. J.....718 Sedgwick St., Chicago, Ill.  
Ravenal, M. P.....Madison, Wis.

**Non-Active Members**

Campbell, O. B.....647 Euclid Ave., Cleveland, O.  
Dutton, C. F.....4816 Franklin Ave., Cleveland, O.

**Active Members**

(Paid up for 1915)

Abbott, William J.....The Lennox Bldg.  
Adams, Thomas.....5018 Broadway Ave.  
Aeberli, Fred.....8514 Wade Park Ave.  
Albl, Charles J.....4962 Broadway Ave.  
Albl, Michael A.....5074 Broadway Ave.  
Allen, Fred Y.....3909 Cedar Ave.  
Anderson, John.....2431 83rd St., S. E.  
Arnold, G. D.....8812 Carnegie Ave.  
Austin, J. Bruner.....10406 Euclid Ave.  
Bachman, U. M.....1683 E. 82nd St.  
Bailey, Robt. T.....1542 E. 55th St.  
Baker, L. K.....The Lennox Bldg.  
Baldwin, A. M.....11323 Superior Ave.  
Banker, N. S.....E. 105th St. & Superior Ave.  
Bard, I. W.....6318 Lorain Ave.  
Barger, William T.....Orlando, Fla.  
Barricelli, G. A.....The Rose Bldg.  
Bauman, Geo. I.....1021 Prospect Ave.  
Baumoel, S.....3203 Superior Ave.  
Beach, Paul E.....1803 E. 82nd St.

Becker, H. A.....New England Bldg.  
Bee, Chas. Howard.....The Rose Bldg.  
Belkowsky, I. M.....2291 E. 55th St.  
Bell, Ward C.....14520 Detroit Ave.  
Belt, J. H.....Pensacola, Fla.  
Benner, Wallace J.....16803 Detroit Ave.  
Bennett, G. U.....5711 Lexington Ave.  
Berger, Samuel S.....1946 St. Clair Ave.  
Berkes, H. A.....1021 Prospect Ave.  
Bernstein, S. L.....The Lennox Bldg.  
Bigelow, O. P.....8307 Superior Ave.  
Biggar, Hamilton Fisk.....1110 Euclid Ave.  
Biggar, Hamilton Fisk, Jr.....1110 Euclid Ave.  
Bill, Arthur H.....1021 Prospect Ave.  
Birge, Russell Hall.....1021 Prospect Ave.  
Bishop, R. H., Jr.....The Rose Bldg.  
Biskind, I. J.....2350 E. 55th St.  
Black, C. A.....8451 Broadway Ave.  
Black, Davidson.....W. R. U. Medical College  
Black, J. F.....Mentor Headlands, Painesville, O.  
Blahd, M. E.....1021 Prospect Ave.

## Active Members—Continued

Bliss, H. C.	2705 Woodland Ave.	Dexter, Richard	The Rose Bldg.
Bondy, E. R.	746 Euclid Ave.	Dickenson, J., Jr.	1021 Prospect Ave.
Bonta, M. B.	The Rose Bldg.	Dittrick, H.	1021 Prospect Ave.
Borts, M.	9733 Logan Court	Doolittle, W. F.	9510 Euclid Ave.
Bourn, E. L.	Brecksville, O.	Droege, Robert C.	United Bank Bldg.
Bowden, D. P.	The Leader-News Bldg.	Drysdale, H. H.	The Rose Bldg.
Boyd, W. R.	2210 E. 105th St.	Dunn, J. J.	7604 Superior Ave.
Brainerd, H. C.	5152 Superior Ave.	Edwards, E. P.	The Rose Bldg.
Breck, Theo. B.	653 E. 105th St.	Ehret, C. A.	The Schofield Bldg.
Brelsford, H. H.	The Rose Bldg.	Elliott, R. W.	Euclid Ave. & E. 105th St.
Brett, J. H.	Cedar Ave. & E. 105th St.	Engel, Rudolph C.	4607 Broadway Ave.
Bretz, I. S.	7909 Euclid Ave.	Englander, Simon	1021 Prospect Ave.
Briggs, C. E.	The Lennox Bldg.	Evans, Sam'l W.	3229 E. 93rd St.
Brody, Myer	Woodland & E. 37th St.	Farnsworth, G. Bourne	2047 E. 9th St.
Brokaw, Wm. F.	2102 E. 55th St.	Feil, Harold	2429 E. 55th St.
Brooks, E. R.	2152 E. 89th St.	Fisher, Ralph E.	The Rose Bldg.
Brudno, Emil M.	The Lennox Bldg.	Fleidner, G. B.	1821 W. 25th St.
Bruening, A. H.	2838 W. 25th St.	Foldes, Desiderius	1021 Prospect Ave.
Bruner, Wm. E.	The New England Bldg.	Follansbee, G. E.	The New England Bldg.
Bubis, Jacob L.	1725 E. 82nd St.	Ford, Clyde E.	1021 Prospect Ave.
Bucher, Walter M.	4189 Pearl Rd.	Fox, J. C.	13922 St. Clair Ave.
Buel, J. J.	The New England Bldg.	Francisci, M.	3242 Lorain Ave.
Buffett, G. P.	811 Jefferson Ave.	Franko, F. C.	Woodland Ave. & E. 55th St.
Bunts, Frank E.	1021 Prospect Ave.	Fried, Amos E.	1764 E. 55th St.
Burdick, H. J.	4415 Cedar Ave.	Friedrich, M.	The Rose Bldg.
Burke, T. A.	The Rose Bldg.	Friend, John M.	2803 Walton Ave.
Calkins, T. J.	8912 Superior Ave.	Fritch, J. C.	W. 25th St. & Bridge Ave.
Cameron, R. L.	14006 St. Clair Ave.	Fry, R. D.	The Rose Bldg.
Campbell, A. D.	7503 Superior Ave.	Fullerton, Wm. D.	1021 Prospect Ave.
Carey, M. J.	1952 E. 105th St.	Furrer, A. F.	1110 Euclid Ave.
Carlisle, I. C.	720 E. 105th St.	Gallagher, F. J.	The Lennox Bldg.
Carlton, S. E.	3316 Broadview Rd.	Gallagher, J. V.	The Lennox Bldg.
Carothers, C. J.	2047 E. 9th St.	Gamble, John K.	1302 E. 84th St.
Carpenter, M. W.	1021 Prospect Ave.	Garber, M.	6204 St. Clair Ave.
Casto, Frank M.	The Rose Bldg.	Geib, F. J.	1021 Prospect Ave.
Cerri, Nicola	402 Superior Bldg.	Gernhard, W. E.	1942 W. 65th St.
Chamberlain, Webb P.	7405 Detroit Ave.	Gerstenberger, H. J.	1021 Prospect Ave.
Chamberlin, Wm. B.	1021 Prospect Ave.	Gill, William C.	1021 Prospect Ave.
Chambers, William	1521 E. 82nd St.	Gittlesohn, R.	4005 Woodland Ave.
Cheetham, Arthur M.	13010 Miles Ave.	Glass, Geo. F.	13491 Euclid Ave.
Childs, L. W.	1110 Euclid Ave.	Goldfinger, J.	The Rose Bldg.
Chisholm, Horatio F.	1120 Euclid Ave.	Goodman, I. J.	2050 W. 25th St.
Civins, Albert L.	E. 55th & Woodland Ave.	Goodwin, E. M.	10403 St. Clair Ave.
Clapp, Harold T.	The New England Bldg.	Graber, C. Lee	15703 Detroit Ave.
Clark, F. S.	The Rose Bldg.	Gregory, W. M.	Berea, O.
Clark, Wm.	7803 Cedar Ave.	Grossman, Jos. H.	2196 E. 81st St.
Cogan, J. E.	The Rose Bldg.	Gruber, Thos. K.	Cleveland City Hospital
Cohen, Arnold	Reserve Trust Bldg.	Gunsolly, W. N.	2084 E. 46th St.
Cohen, Samuel B.	1374 E. 105th St.	Haefele, G. L.	1520 Clark Ave.
Cole, Harold Newton	2047 E. 9th St.	Hain, C. O.	2067 W. 25th St.
Colvin, B. B.	11214 Superior Ave.	Haldy, Walter H.	The Schofield Bldg.
Connell, A. E.	7113 Lexington Ave.	Hall, C. A.	1021 Prospect Ave.
Cook, A. J.	3323 E. 55th St.	Hamann, C. A.	1021 Prospect Ave.
Cook, J. E.	The New England Bldg.	Hammond, A. P.	7412 Woodland Ave.
Coplan, M.	3422 Lorain Ave.	Handerson, H. E.	1924 E. 66th St.
Coppedge, E. P.	4726 Superior Ave.	Hannum, B. G.	The Caxton Bldg.
Corlett, W. T.	3618 Euclid Ave.	Hannum, E. A.	The Rose Bldg.
Corrigan, F. P.	The Lennox Bldg.	Hannum, Eugene S.	3076 W. 51st St.
Costello, T. A.	Wade Park Ave. & E. 107th St.	Hanson, D. S.	3290 E. 55th St.
Cowgill, W. W.	8507 Wade Park Ave.	Hanzlik, Paul J.	W. R. U. Medical College
Cox, E. H.	2047 E. 9th St.	Harpster, C. I.	12302 Superior Ave.
Crawford, C. C.	10312 St. Clair Ave.	Hartzell, H. J.	9402 Madison Ave.
Crile, Geo. W.	1021 Prospect Ave.	Hastings, Kent K.	Rocky River, O.
Cross, James A.	9335 Miles Ave.	Hay, Chas. H.	2004 W. 25th St.
Crowell, W. S.	1274 Main St.	Heidler, G. K.	7610 Kinsman Rd.
Crumrine, H. C.	5606 Euclid Ave.	Heimlich, D.	The Rose Bldg.
Cummer, Clyde L.	The Rose Bldg.	Hempstead, Helen	10509 Euclid Ave.
Curtiss, Nicholson F.	2045 Adelbert Rd.	Henry, Arthur S.	2225 E. 82nd St.
Cutler, F. E.	The Rose Bldg.	Herkner, Henry A.	928 E. 79th St.
Davidson, J. F.	3002 Cedar Ave.	Herrick, F. C.	The Lennox Bldg.
Davis, H. H.	1730 W. 25th St.	Herrick, H. B.	Euclid Ave. & E. 105th St.
Davis, H. L.	The Schofield Bldg.	Herrick, Wm. H.	746 Euclid Ave.
Dial, Emory L.	8911 Lorain Ave.	Hewitt, J. H.	Cleveland City Hospital
Difford, C. L.	Lorain Ave. & W. 65th St.		
Deacon, Edward M.	The Rose Bldg.		



# Active Members—Continued

Hickin, F. W.	Clark Ave. & W. 14th St.	Lowe, Donald Blair	Health Dept., City Hall
Hill, Walter C.	1021 Prospect Ave.	Lower, W. E.	1021 Prospect Ave.
Hitchings, Frederick W.	10406 Euclid Ave.	Lowman, J. H.	1307 Prospect Ave.
Hobson, John F.	17618 Detroit Ave.	Lucas, W. Harris	2004 W. 25th St.
Hobson, W. S.	1021 Prospect Ave.	Luck, Henry C.	The Rose Bldg.
Hole, Charles M.	8920 Cedar Ave.	Lueke, A. W.	1780 E. 55th St.
Hoover, C. F.	The Rose Bldg.	Lupeson, H.	6408 St. Clair Ave.
Horne, E. C.	9011 Broadway Ave.	McAfee, J. D.	8504 Broadway Ave.
Hosick, W. A.	10631 Euclid Ave.	McDonald, C.	The Lennox Bldg.
Houck, E. O.	4911 Franklin Ave.	McGannon, A. C.	6603 Lorain Ave.
Howard, A. B.	The Rose Bldg.	McGay, N. P.	906 E. 105th St.
Howland, A. P.	367 Colonial Arcade	McGee, J. B.	10502 Wade Park Ave.
Hribal, W. P.	2363 E. 85th St.	MacFarland, Chas. H.	8444 Broadway Ave.
Humiston, W. H.	The Rose Bldg.	MacLachlan, John	3809 Prospect Ave.
Hutchins, Fannie C.	The Rose Bldg.	MacLeod, Geo. D.	1556 Addison Rd.
Hyde, A. G.	Cleveland State Hospital	McMichael, J. C.	10502 St. Clair Ave.
Hyde, Wm. H.	8411 Clark Ave.	McNamara, Francis X.	8908 Superior Ave.
Hyman, Jacob	11102 Superior Ave.	McPeck, E. E.	8303 Hough Ave.
Ingalls, Norman W.	W. R. U. Medical College	Macleod, J. J. R.	W. R. U. Medical College
Ingersoll, J. M.	1021 Prospect Ave.	Manley, R. M.	The Schofield Bldg.
Irwin, A. F.	2219 Fairmount Rd.	Manning, W. J.	W. 65th St. & Detroit Ave.
Jacobs, P. A.	The Rose Bldg.	Marine, David	W. R. U. Medical College
Jenkins, A. A.	1721 E. 55th St.	Martin, W. Claude	1341 E. 110th St.
Jenkins, Henry	1845 E. 75th St.	Maschke, Alfred S.	1021 Prospect Ave.
Jones, Arthur S.	1021 Prospect Ave.	Masenhimer, H. W.	The New England Bldg.
Jones, J. Arthur	The Rose Bldg.	Maska, John E.	2184 W. 14th St.
Jones, J. D.	7252 Broadway Ave.	Medlin, W. A.	3316 W. 25th St.
Jones, Nathaniel M.	The New England Bldg.	Merriam, Walter H.	1021 Prospect Ave.
Kaestlen, S. E.	2532 Lorain Ave.	Merrick, W. E.	St. Clair Ave. & E. 117th St.
Kahn, M.	The Rose, E. 55th & Central	Metz, R. B.	1021 Prospect Ave.
Karsner, Howard T.	2021 E. 89th St.	Metzenbaum, M. T.	The Rose Bldg.
Kelker, H. C.	9856 Lorain Ave.	Milani, Pio	2721 Woodland Ave.
Kelley, S. W.	2255 E. 55th St.	Miller, Amanda H.	2443 E. 55th St.
Kennerdell, T. R.	3105 W. 25th St.	Miller, Wm. T.	1110 Euclid Ave.
Kerr, I. J.	The New England Bldg.	Millikin, B. L.	1110 Euclid Ave.
Keyes, E. W.	1912 W. 65th St.	Miner, Irving C.	6035 Superior Ave.
Klaus, E.	1699 W. 25th St.	Mitchell, H. E.	Warren Rd. & Detroit Ave.
Klaus, M. H.	4506 Lorain Ave.	Mizer, Thos. J.	Lorain Ave. & Fulton Rd.
Knowlton, L. G.	Berea, O.	Mohrman, Frank H.	11636 Detroit Ave.
Kochmit, Matthew G.	4918 Broadway Ave.	Monaghan, E. P.	3372 E. 93rd St.
Kofron, J. V.	5312 Broadway Ave.	Monson, S. H.	The Lennox Bldg.
Kollar, J. B.	1846 E. 55th St.	Moore, J. M.	6726 St. Clair Ave.
Konrad-Filipiak, Frances	6827 Forman Ave.	Moorehouse, G. W.	1110 Euclid Ave.
Kopfstein, F. T.	8020 Superior Ave.	Morgan, J. B.	7305 Lorain Ave.
Kotershall, J. J.	2841 W. 25th St.	Morrill, Gordon N.	2047 E. 9th St.
Krause, C. R.	1779 E. 89th St.	Morton, F. J.	4506 Lorain Ave.
Krebs, P. H.	2736 W. 25th St.	Moses, K. R.	Cleveland State Hospital
Kurlander, J. J.	2439 E. 55th St.	Munsie, James	1632 E. 65th St.
Kurtz, Harry B.	The Rose Bldg.	Mussun, Wm. G.	7034 Superior Ave.
Kuta, F. J.	7326 Broadway Ave.	Nachtigall, B.	3093 W. 25th St.
Ladd, L. W.	1021 Prospect Ave.	Nash, A. C.	10502 St. Clair Ave.
Laffer, Walter B.	The Rose Bldg.	Neary, E. P.	10516 St. Clair Ave.
Landgrebe, Wm. A.	10507 Superior Ave.	Nelson, Chas. F.	The Schofield Bldg.
Lanzer, Albert H.	1432 Addison Rd.	Neuberger, Joseph A.	5424 St. Clair Ave.
Large, S. H.	The Rose Bldg.	Neuberger, John	1544 W. 25th St.
Latimer, Jay A.	10508 Superior Ave.	Newcomb, R. B.	Illuminating Bldg.
Lauder, Edward	1021 Prospect Ave.	Norton, F. B.	2164 E. 46th St.
Lawrence, E. J.	Nottingham, O.	Nungesser, J. J.	7216 Superior Ave.
LeFevre, W. I.	The Lennox Bldg.	Nuss, John C.	5329 Fleet Ave.
Lemon, Angeline M.	1021 Prospect Ave.	Nuss, William	11636 Detroit Ave.
Lemon, W. L.	1730 E. 27th St.	Oakley, F. A.	The Lennox Bldg.
Lenhart, C. H.	10924 Ashbury Ave.	Ochs, K. E.	2407 St. Clair Ave.
Lenker, John N.	1021 Prospect Ave.	Ochsner, Rudolph J.	2091 E. 90th St.
Leslie, Hugh J.	651 Hayden Ave.	O'Connell, C. A.	6503 Detroit Ave.
Levenberg, B.	2314 E. 55th St.	Oldenburg, Fred C.	3073 W. 14th St.
Lewis, Geo. H.	8605 Detroit Ave.	O'Neill, Geo. M.	8703 Superior Ave.
Lewis, J. M.	The Rose Bldg.	Ormsby, H. B.	The Rose Bldg.
Lichty, M. J.	1803 E. 82nd St.	Osborn, Wm. O.	1021 Prospect Ave.
Lincoln, William R.	The Lennox Bldg.	Osmond, J. D.	1021 Prospect Ave.
Lind, S. C.	2803 Walton Ave.	Oster, L. W.	3403 Superior Ave.
Linn, Fred W.	5304 Lorain Ave.	Parke, Milton J.	The Schofield Bldg.
Loope, A. M.	7500 Madison Ave.	Parker, C. B.	The Rose Bldg.



## Active Members—Continued

Parsons, Willis T.	11712 Detroit Ave.	Sloan, Harry G.	1021 Prospect Ave.
Paulin, Norman O.	5012 Euclid Ave.	Smigel, P. S.	7211 Broadway Ave.
Pav, A. F.	2648 E. 55th St.	Smith, C. W.	2069 Cornell Rd.
Pearse, A. J.	10427 St. Clair Ave.	Smith, D. B.	The Arcade
Perkins, R. G.	W. R. U. Medical College	Smith, George Seeley	1021 Prospect Ave.
Perry, W. H.	The Rose Bldg.	Smith, J. T.	The Rose Bldg.
Peskind, A.	2414 E. 55th St.	Snow, Minabel	4614 Franklin Ave.
Peskind, B.	2414 E. 55th St.	Sollman, Torald	W. R. U. Medical College
Peskind, S.	2414 E. 55th St.	Soyer, George P.	1846 W. 25th St.
Peterka, Edward	5601 Broadway Ave.	Spencer, John G.	The Rose Bldg.
Peters, Walter	7720 Superior Ave.	Spicer, D. M.	1406 W. 25th St.
Peterson, E. A.	Board of Education	Spitzig, B. L.	The Rose Bldg.
Phillips, John	3849 Prospect Ave.	Spurney, A. B.	2584 E. 55th St.
Pitkin, Carlos E.	688 E. 105th St.	Spurney, A. F.	1021 Prospect Ave.
Placak, Jos. C.	The Rose Bldg.	Staral, J. A.	The Rose Bldg.
Plannette, Herbert L.	8221 Superior Ave.	Stepp, Morris D.	Payne Ave. & E. 24th St.
Plent, J. B.	5634 Broadway Ave.	Stern, Walter G.	The Schofield Bldg.
Pomeroy, L. A.	2047 E. 9th St.	Steuer, D. B.	3735 Woodland Ave.
Pope, Carlyle	1021 Prospect Ave.	Steuer, Joseph C.	The Rose Bldg.
Powell, E. A.	The Schofield Bldg.	Stevenson, G. W.	2196 E. 93rd St.
Prendergast, David	1110 Euclid Ave.	Stewart, Geo. N.	W. R. U. Medical College
Prudhomme, A. J.	3906 Lorain Ave.	Stewart, J. R.	The Rose Bldg.
Quayle, John H.	1110 Euclid Ave.	Stoeltzing, C. A.	759 E. 105th St.
Quittner, Samuel S.	5512 Woodland Ave.	Stone, Charles W.	The Rose Bldg.
Rasing, W. B.	1395 E. 9th St.	Stone, E. H.	5511 Euclid Ave.
Ravitz, Leonard	2291 E. 55th St.	Stoner, Willard C.	1110 Euclid Ave.
Rhodes, E. B.	13425 Euclid Ave.	Storey, Alvin S.	7100 Detroit Ave.
Rice, F. A.	11323 Superior Ave.	Stotter, James	The Lennox Bldg.
Richards, Chas. E.	2507 Archwood Ave.	Stuart, Charles C.	The New England Bldg.
Riegelhaupt, Samuel	2162 E. 55th St.	Suchy, F. H.	8613 Quincy Ave.
Rigelhaupt, Wm.	1814 W. 25th St.	Sunkle, Robert H.	2107 Clark Ave.
Rieger, W. H.	The Leader-News Bldg.	Suva, John S.	2370 E. 87th St.
Riley, F. W.	942 Prospect Ave.	Taft, Robert E.	910 Union Ave.
Riley, J. A.	2162 E. 86th St.	Tarr, H. M.	1841 Euclid Ave.
Robertson, Arthur E.	Cor. Broadview & W. 25th St.	Tarr, R. T.	5466 Broadway Ave.
Rockwood, Harry L.	Detroit St. & Fry Ave.	Taylor, Lester	1021 Prospect Ave.
Rogers, H. W.	The New England Bldg.	Taylor, T. J.	9410 Pierpont Ave.
Romig, E. F.	13586 Euclid Ave.	Taylor, A. C.	13576 Euclid Ave.
Rosenberg, E.	Woodland Ave. & 83rd St., S. E.	Thomas, Geo. F.	1021 Prospect Ave.
Rosewater, Eugene D.	2429 E. 55th St.	Thomas, J. J.	1110 Euclid Ave.
Roth, Frank	8623 Quincy Ave.	Thomas, Oscar T.	1021 Prospect Ave.
Rowland, V. C.	1021 Prospect Ave.	Thomas, Robert L.	1878 E. 87th St.
Rubin, I. M.	4505 Woodland Ave.	Thompson, Clive W.	118th St. & St. Clair Ave.
Ruh, H. O.	2500 E. 35th St.	Thornton, Wm. J.	11308 St. Clair Ave.
Russell, Geo. C.	1780 E. 9th St.	Tierney, J. S.	The Lennox Bldg.
Rust, E. G.	The Lennox Bldg.	Tims, W. A.	1488 E. 105th St.
Sager, B. E.	The Rose Bldg.	Todd, T. Wingate	W. R. U. Medical College
Sampliner, W. E.	The Rose Bldg.	Towslee, Lillian G.	1021 Prospect Ave.
Sanford, Henry L.	1021 Prospect Ave.	Tripp, Ira A.	1021 Prospect Ave.
Sawyer, J. P.	The Rose Bldg.	Tuckerman, J. E.	1021 Prospect Ave.
Schlesinger, Wm. A.	5409 Broadway Ave.	Tuckerman, W. C.	1021 Prospect Ave.
Schlink, A. G.	8608 Hough Ave.	Tuckerman, W. H.	1021 Prospect Ave.
Schmoldt, F. J.	The Rose Bldg.	Tupper, George B.	9704 Cedar Ave.
Schnee, R. G.	942 Prospect Ave.	Turrell, R. L.	1109 E. 79th St.
Schott, Morris	1355 E. 55th St.	Updegraff, R. K.	7511 Franklin Ave.
Scott, A. Clynton	6523 Euclid Ave.	Upson, George D.	The Leader-News Bldg.
Scott, N. Stone	The Citizens Bldg.	Wagner, H. G.	The Rose Bldg.
Scully, A. P.	2518 Detroit Ave.	Wagner, L. H.	3056 Payne Ave.
Season, E. H.	10403 Euclid Ave.	Wahl, H. R.	Pathology Dept., Lakeside Hospital
Seidel, R. R.	Bedford, O.	Walker, O. P.	1329 Bank of Com. & Tr. Bldg., Memphis, Tenn.
Selman, David	The Rose Bldg.	Ward, C. E.	2732 W. 14th St.
Sexton, F. E.	5132 Superior Ave.	Warner, A. R.	Lakeside Hospital
Shackleton, W. E.	1021 Prospect Ave.	Warner, W. C.	1752 E. 89th St.
Sharp, Jay D.	2917 E. 55th St.	Weber, W. C.	The Rose Bldg.
Sharp, W. D.	1500 E. 105th St.	Weber, O. A.	1021 Prospect Ave.
Sherman, H. G.	The Rose Bldg.	Webster, H. H.	4234 Pearl Rd.
Shirkey, U. S. L.	6404 Lorain Ave.	Webster, S. J.	4234 Pearl Rd.
Shirley, O. M.	1021 Prospect Ave.	Wedler, C. R.	4504 Superior Ave.
Shube, Herman	4505 Woodland Ave.	Weir, William H.	1021 Prospect Ave.
Shupe, T. P.	1021 Prospect Ave.	Wells, J. H.	1858 E. 55th St.
Silbermann, Jacob	Woodland Ave. & E. 55th St.	West, K. S.	1110 Euclid Ave.
Sill, R. H.	2510 Franklin Ave.		
Skeel, A. J.	1834 E. 65th St.		
Skeel, R. E.	1021 Prospect Ave.		



# Active Members—Continued

Wheelock, L. A.....	12113 Euclid Ave.	Woolgar, W. J. W.....	9304 Cedar Ave.
White, C. C.....	1532 E. 55th St.	Wyckoff, C. W.....	1021 Prospect Ave.
Whitslar, W. H.....	The Schofield Bldg.		
Wickersham, J. W.....	109 Charlotte Ave., Detroit, Mich.	Yarian, Norman C.....	7405 Detroit Ave.
Wille, Clarence W.....	U. S. Marine Hospital	Yoder, H. E.....	8900 Lorain Ave.
Williams, C. D.....	717 Rose Bldg.	Yoder, Ivan I.....	W. 25th St. & Detroit Ave.
Williams, T. B.....	6403 Quincy Ave.	Young, Samuel A.....	4021 E. 71st St.
Wimer, J. S.....	918 E. 76th St.	Young, T. C.....	3524 E. 93rd St.
Wirtshafter, Morris.....	4217 Payne Ave.		
Witter, C. Orville.....	5415 Bridge Ave.	Zimmer, O.....	4812 Clark Ave.
Wolfenstein, Leo.....	The Rose Bldg.	Zwick, Isidore.....	5116 Woodland Ave.
Wood, Frederick J.....	W 25th St. & Church Ave.		
Wood, J. S.....	712 E. 152nd St.		

# Non-Resident Members

(Paid up for 1915)

Andrews, Wm. B.....	318 Main St., Kent, O.	Leonard, F. E.....	Oberlin, O.
Bauer, M. M.....	Lake, O.	Leroy, B. R.....	Athens, O.
Bliss, C. B.....	411 Columbus Ave., Sandusky, O.	Lincoln, Walter.....	Cocoa, Fla.
Boyd, J. P.....	Akron, O.	Logan, Geo. M.....	303 Second Nat'l Bldg., Akron, O.
Browning, Chas. H.....	Oberlin, O.	Lowe, J. W.....	Mentor, O.
Case, C. E.....	Ashtabula, O.	Maynard, O. T.....	308 Third St., Elyria, O.
Chadwick, L. S.....	Jacksonville, Fla.	Metcalf, H. M.....	Elyria, O.
Clark, Colin R.....	415 Bryson St., Youngstown, O.	Miller, M. F.....	Wadsworth, O.
Cotton, C. E.....	Ashville, N. C.	Monosmith, O. B.....	426 Broadway Ave., Lorain, O.
Cox, S. S.....	Wagner Block, Lorain, O.	Oakes, I. N.....	Box 4, N. Ridgeville, O.
Cozad, H. Irving.....	Cuyahoga Falls, O.	Patton, C. C.....	Vermilion, S. D.
Culbertson, N. W.....	316 E. Main St., Massillon, O.	Peterson, H. D.....	423 Columbus Ave., Sandusky, O.
Cushing, C. H.....	33 Century Block, Elyria, O.	Pomeroy, F. S.....	Chardon, O.
Davis, James R.....	Painesville, O.	Radcliffe, George H.....	Peninsula, O.
DeWitt, J. P.....	122 Shorb Ave., N. W., Canton, O.	Rankin, Geo. T.....	70 S. Forge St., Akron, O.
Donaldson, John B.....	City Bank Bldg., Lorain, O.	Reich, L.....	Leonard Bldg., Augusta, Ga.
Eldridge, F. A.....	Berlin Heights, O.	Reynolds, R. D.....	Greenspring, O.
Eisenbrey, A. B.....	113th St. & Amsterdam Ave., New York City	Riewel, H. V.....	Hanford, Cal.
Everhard, N. S.....	Wadsworth, O.	Rudolph, J. Francis.....	Belle Plaine, Kas.
Fraunfelter, J.....	Canton, O.	Schilling, C. E.....	120 Fifth St., N. W., Canton, O.
Gamble, R. V.....	New London, O.	Schuffel, H. M.....	316 Cleveland Ave., S. W., Canton, O.
Gill, George.....	Elyria, O.	Searl, W. A.....	Cuyahoga Falls, O.
Handler, S.....	924 St. Paul St., Rochester, N. Y.	Selby, C. D.....	659 Spitzer Bldg., Toledo, O.
Hart, Wm. E.....	Elyria, O.	Shumaker, D. W.....	Canal Dover, O.
Hayford, H. S.....	113 Prescott St., Toledo, O.	Smith, F. K.....	Warren, O.
Herrick, H. J.....	Hudson, O.	Sneaser, Wm.....	Madison, O.
Hobson, J. D.....	Stevensville, Mont.	Stevenson, M. D.....	165 E. Market St., Akron, O.
Hoover, Chas. S.....	Alliance, O.	Suker, Geo. F.....	25 E. Washington St., Chicago, Ill.
Hoover, D. E.....	Warren, O.	Thatcher, W. F.....	181 Forest St., Oberlin, O.
Hopkins, O.....	Middlefield, O.	Tidball, A. H.....	Garrettsville, O.
Horn, W. H.....	910 Schweiter Bldg., Wichita, Kas.	Vincent, F. W.....	Baguio, P. I.
House, Chas. F.....	Painesville, O.	Walker, A. B.....	319 Tuscarawas St., Canton, O.
Hubbell, W. B.....	146 Middle Ave., Elyria, O.	Ward, C. S.....	Warren, O.
Ingersoll, A. J.....	Mentor, O.	Waugh, Justin M.....	Hood River, Ore.
Jacobs, H. H.....	Hamilton Bldg., Akron, O.	Weber, John H.....	Sav. & Loan Bldg., Akron, O.
Jacobson, J. H.....	237 Michigan St., Toledo, O.	Weitz, Geo. J.....	Boonville, Mo.
Jameson, G. C.....	Oberlin, O.	Welch, H. E.....	412 Stambaugh Bldg., Youngstown, O.
Jones, D. J.....	1539 W. Federal St., Youngstown, O.	Weston, Herbert T.....	814 Perry-Payne Bldg., Cleveland, O.
Knox, J. D.....	Niles, O.	Wolf, Leslie A.....	Ravenna, O.
LaMont, C. A.....	Canton, O.	Zimmerman, H. A.....	Youngstown, O.
Larimore, F. C.....	19 N. Main St., Mt. Vernon, O.	Zininger, Geo. F.....	The Colonial, Canton, O.

**Associate Members**

(Paid up for 1915)

**Dentists**

Barnes, Varney E.....The Rose Bldg.  
 Stephan, John F.....The New England Bldg

**Pharmacists**

Benfield, C. W.....Payne Ave. & E. 55th St.  
 Fox, W. M.....9702 Cedar Ave.  
 Hankey, Wm. T.....1382 W. 9th St.  
 Hopp, L. C.....1104 Euclid Ave.  
 Muhlhan, O. E.....10508 Cedar Ave.  
 Selzer, E. R.....1600 E. 117th St.  
 Sherwood, H. J.....The Rose Bldg.  
 Winter, Carl.....2812 E. 79th St.

**Veterinarians**

Backus, Newell D.....345 W. 2nd St., Elyria, O.  
 Bisbee, W. A.....5734 Portage Ave.  
 Borsus, Mihaly.....3482 Woodland Ave.  
 Burrows, Samuel.....2210 E. 71st St.  
 Classey, Wm. J.....2027 E. 105th St.  
 Considine, Jas. B.....3302 W. 25th St.  
 Cooley, A. S.....E. 40th St. & Perkins Ave.

Cunningham, A. E.....3826 Carnegie Ave.  
 Dunn, L. J.....506 City Hall  
 Eddy, C. W.....1905 Brainard Ave.  
 Fair, W. C.....625 Long Ave.  
 Greenwood, Ross A.....Painesville, O.  
 Hart, A. C.....3225 W. 65th St.  
 Mawer, G. C.....6009 Bridge Ave.  
 McCollister, F. L.....Willoughby, O.  
 Nugent, C. E.....1556 W. 25th St.  
 Powell, R. R.....3302 W. 25th St.  
 Prucha, Jos. V.....3225 W. 65th St.  
 Redhead, W. H.....3225 W. 65th St.  
 Roueche, R. C.....6901 Detroit Ave.  
 Shepard, E. H.....2027 E. 105th St.  
 Shifrin, A. N.....4711 Scovill Ave.  
 Turner, W. H.....Amherst, O.  
 Valway, W. H.....9012 Miles Park Ave.  
 Way, Rixford D.....E. 40th St. & Perkins Ave.

**Miscellaneous**

Aikins, Prof. H. A.....2038 Cornell Rd.  
 Waite, F. C., Ph. D.....W. R. U. Medical College



## BOOK REVIEWS

**The Administrative Control of Small-Pox.** How to Prevent or Stop an Outbreak. By W. McC. Wanklyn, B.A. Cantab., M.R.C.S., L.R.C.P., D.P.H.; Fellow of the Royal Society of Medicine; Fellow of the Society of Medical Officers of Health, and formerly Referee in the Diagnosis of Small-pox, and Medical Superintendent of the River Ambulance Service (Small-pox) of the Metropolitan Board. First Edition; 8 vo. of 83 pages. Longmans, Green & Co., 39 Paternoster Row, London—New York, Bombay and Calcutta. Price, \$1.10.

This volume, "The Administrative Control of Small-pox," is a companion to "How to Diagnose Small-pox," by the same author, and as stated by him, has the same object, namely, "to contribute to the prevention of that disease." It was prepared for the post-graduate students working for the diploma of public health given by some English universities. For the student of public health in the United States, the parts of this book which deal with the importance of exact diagnosis, close observation of contacts and regular disinfectants are indeed worth while.

On page 80, Doctor Wanklyn gives what he considers the three main indications for instant operation upon notification of small-pox. The main indications are these:

1. To ascertain the extent of the existing mischief, and its origin.
2. To eradicate the existing mischief.
3. To arrest its further spread by watching for fresh cases, and rendering them harmless as they occur.

The author then follows the list of indications by a list of seventeen detailed steps which are to be taken.

While the book is primarily written for those interested in public health, and for health officers, it nevertheless would be instructive for others by showing them the nice attention to detail of the modern health officer, and call to their minds the amount of thorough and actual work involved in controlling epidemics of infectious diseases. H. O. R.

**The Tonsils—Faucial, Lingual, and Pharyngeal.** With Some Account of the Posterior and Lateral Pharyngeal Nodules. By Harry A. Barnes, M.D., Instructor in Laryngology, Harvard Medical School; Surgeon in the Department for Diseases of the Nose and Throat, Boston Dispensary; Assistant Laryngologist, Massachusetts General Hospital; Member New England Laryngological and Otological Society; Member American Laryngological, Rhinological and Otological Society. Illustrated. C. V. Mosby Company, St. Louis, 1914. Price, \$3.00.

For an author to attempt to deal with nearly all aspects of the tonsils, from a general discussion of lymphoid tissue to operative surgery, in 160 pages, would necessarily restrict him to mere outlines in most instances. The amount of literature that has appeared in the past few years upon the subject of tonsils and lymphoid tissue has been of a very great volume. Doctor Barnes has evidently appreciated this fact, for he says in his preface, "the tonsils have held such a prominent place in the periodical medical press, as seemingly to make unnecessary a book devoted to them."

The first five chapters of this work consider the embryology, anatomy, physiology and pathology of the tonsils. As this entire discussion covers only 77 pages, it can easily be seen that no attempt has been made to exhaustively cover the subject. The next three chapters of some 48 pages treats of the diseases of the tonsils, while the last two chapters of 32 pages are devoted to surgery.

Any of the above divisions would in itself furnish abundant material for an excellent monograph, if treated thoroughly. Our libraries are be-

coming filled with books such as this one, the value of which, except to the veriest amateur, is doubtful. If we are to have monographs upon such subjects, why not have them complete, well-rounded stones of information; a place from which authoritative statements can be obtained.

H. O. R.

---

**The Practical Medicine Series.** Volume V. Pediatrics, edited by Isaac A. Abt, M.D., Professor of Pediatrics, Northwestern University Medical School; Attending Physician Michael Reese Hospital. Orthopedic Surgery, edited by John Didlon, A.M., M.D., Professor of Orthopedic Surgery, Rush Medical College, with the collaboration of Charles A. Parker, M.D. Series 1914. The Year Book Publishers, Chicago. Price of this volume, \$1.35.

The volumes comprising the "Practical Medicine Series," published by the Year Book Publishers, of Chicago, are too well known to need an introduction here.

This volume, which includes Pediatrics and Orthopedic Surgery, is of much the same standard as the others of the Series. Doctor Abt has taken from the leading articles which have appeared during the past year a sufficient number upon each subject with which he deals to give a fairly good idea of the advances in that division.

The Orthopedic Section is written by Doctor John Didlon, who handles his subject in much the same manner. References are given for all the articles reviewed. It is to be hoped that at some time the editors will see fit to use the method advised by The American Medical Association, or that used by the Surgeon Generals Library in giving bibliographic references.

For the busy general practitioner wishing to obtain a fairly complete review of the important Pediatric and Orthopedic literature of 1914, this little volume can be recommended.

H. O. R.

---

**Pathology of Oroya Fever.**—R. P. Strong and E. E. Tyzzer, Boston, notice the scarcity of literature on the pathologic lesions of Oroya fever, and give the results of their investigations in a third report on the disease. They describe the anemia in detail, and the histologic changes which they have found. The histology of the disease, they say, is pathognomonic, the characteristic lesions, especially the swollen endothelial cells containing the parasite, which is found especially in the spleen and the lymphatic glands, permitting a definite diagnosis of Oroya fever.—*J. A. M. A.*



## ACKNOWLEDGEMENTS

Painless Childbirth. A General Survey of all Painless Methods, with Special Stress on "Twilight Sleep" and Its Extension to America. By Marguerite Tracy and Mary Boyd. 19 illustrations. Frederick A. Stokes Co., New York, 1915. Price, \$1.50.

Fever, Its Thermotaxis and Metabolism. By Isaac Ott, A. M., M. D., Professor of Physiology, Medico Chirurgical College, Philadelphia; Member of American Physiological Society; Ex-President of American Neurological Association, et cetera. Paul B. Hoeber, New York. Price, cloth, \$1.50, net.

Child Training as an Exact Science. A Treatise Based Upon the Principles of Modern Psychology, Normal and Abnormal. By George W. Jacoby, M. D. Funk and Wagnalls Company, New York and London. Price, \$1.50, net.

Lectures on the Heart. Comprising the Herter Lectures (Baltimore); A Harvey Lecture (New York), and An Address to the Faculty of Medicine at McGill University (Montreal). By Thomas Lewis, M. D., F. R. C. P., D. Sc., Physician City of London Hospital; Assistant Physician and Lecturer in Cardiac Pathology, University College Hospital, London. Paul B. Hoeber, New York, 1915. Price, \$2.00, net.

Practical Medicine Series, 1914, Volume VII, Obstetrics. By Joseph B. DeLee, A. M., M. D., Professor of Obstetrics, Northwestern University Medical School, with the Collaboration of Herbert M. Stowe, M. D. The Year Book Publishers, Chicago. Price of this volume, \$1.35.

Practical Medicine Series, 1914, Volume VIII, Therapeutics, Preventive Medicine, Climatology. Edited by George F. Butler, Ph. G., A. M., M. D.; Henry B. Favill, A. B., M. D.; Norman Bridge, A. M., M. D. The Year Book Publishers, Chicago. Price, \$1.50.

Practical Medicine Series, 1914, Volume X, Nervous and Mental Diseases. Edited by Hugh T. Patrick, M. D., Professor of Neurology in the Chicago Poloclinic; Clinical Professor of Nervous Diseases in the Northwestern University Medical School; Ex-President Chicago Neurological Society; and Peter Bassoe, M. D., Assistant Professor of Nervous and Mental Diseases, Rush Medical College. The Year Book Publishers, Chicago. Price, \$1.35.

The Practical Medicine Series, 1915, Volume I, General Medicine. Edited by Frank Billings, M. S., M. D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury A. M., M. D., Professor of Medicine, Illinois Post-Graduate Medical School. The Year Book Publishers, Chicago. Price, \$1.50, net.

Cancer—Its Cause and Treatment. By L. Duncan Bulkley, M. D., Senior Physician, The New York Skin and Cancer Hospital. Paul B. Hoeber, Medical Publisher, New York. Price, \$1.50, net.

Diabetes Mellitus—Designed for the Use of Practitioners of Medicine. By Nellis B. Foster, M. D., Assistant Professor of Medicine, Cornell University; Associate Physician to the New York Hospital. J. B. Lippincott Company, Philadelphia and London. Price, \$3.00, net.

## MEDICAL NEWS

**Professor Carlson, Next Alpha Omega Alpha Lecturer.**—Doctor A. J. Carlson, Professor of Physiology, University of Chicago, will address a joint meeting of the Alpha Omega Alpha, honorary medical fraternity, of the Western Reserve Medical School and the Experimental Medicine Section of the Cleveland Academy of Medicine, May 14th, at the Medical Library. Subject: "Some Recent Contributions to the Physiology of the Stomach."

---

**Doctor Richard M. Pearce to Address Academy of Medicine.**—The meeting of the Academy of Medicine, on May 21st, is to be given over to an address by Richard Mills Pearce, M. D., Professor of Research Medicine in the University of Pennsylvania, on "The Spleen in Its Relation to Blood Destruction and Regeneration" (illustrated by lantern slides). The growing importance of the spleen in clinical medicine and surgery makes this contribution from a distinguished research worker extremely timely; and the wide experience of Professor Pearce in correlating experimental data with clinical observations is assurance of a presentation of the subject that will be comprehensive and practical.

After serving as Instructor of Pathology at the Harvard Medical School, Assistant Professor of Pathology in the University of Pennsylvania, Professor of Pathology in the Albany Medical College (and Director of the Bender Hygienic Laboratory), and Professor of Pathology in the Bellevue Hospital Medical College of New York University, he was called, in 1910, to the chair of Research Medicine in the University of Pennsylvania. Doctor Pearce's early work on the pathology of diphtheria and on specific cytotoxins gave him an international reputation. His subsequent work on liver necrosis, arteriosclerosis, acute pancreatitis, and then on experimental acute nephritis, stamped him as one of the leading pathologists of the day. His influence in elevating the teaching of pathology and in the advance of medical education generally has been widely felt and has been expressed in numerous publications.

Since 1910, Professor Pearce and a large number of collaborators have devoted the time and resources of the splendidly-equipped John Herr Musser Department of Research Medicine to the study of the spleen in its normal and pathological relations, attacking the subject from both the functional and morphological sides. The close relation of the Department with the University Hospital and other hospitals has made it possible to combine clinical with experimental and other observations. It is the result of these years of study which Professor Pearce will present to the Academy.

---

**Babies' Dispensary and Hospital Post-Graduate Course for Physicians.**—(A) Infant Feeding, Disturbances of Nutrition and the Common Diseases of Infants and Children. By H. J. Gerstenberger, H. O. Ruh, and O. L. Goehle.

(B) The Preparation of the Various Foods and Food Constituents Used in Infant Feeding and Disturbances of Nutrition, and also the Production, Shipping and Care of Milk from the Family to the Home. By H. J. Gerstenberger and C. W. Wykoff.

---

**Return of Doctor A. I. Ludlow from Seoul.**—In a letter written to friends in Cleveland, Doctor Ludlow announces his return to Cleveland from Seoul, Korea, where he has been associated with Severance Hospital and Severance Union Medical College. Doctor Ludlow will leave Seoul, April 9th, and will reach Cleveland about the second week in May, after which his address in Cleveland will be 10906 Hull avenue.



This course will be given at the Central Dispensary and the Out-Door Ward of the Babies' Dispensary and Hospital, 2500 East 35th street, Cleveland, Ohio, during the afternoons of week days, beginning with July 12th and ending, inclusively, with July 31st.

Part A will be given daily from 2 to 4 P. M., and includes lectures, clinics, and ward walks.

Part B will be given twice weekly, from 4 to 5:30 P. M., at the Milk Laboratory of the Babies' Dispensary and Hospital, 2500 East 35th street.

The course will be limited to a minimum class of eight and a maximum of twelve individuals.

The fee for the course will be twenty-five dollars, to be paid on or before July 10th.

Applications, with name, address and school of graduation, should be sent to the following address: The Babies' Dispensary and Hospital, Physicians' Post-Graduate Course, 2500 East 35th street, Cleveland, Ohio.

---

**Doctor J. William White**, Professor Emeritus of Surgery and one of the trustees of the University of Pennsylvania, expects to enter the American Ambulance Service in Paris during the coming summer, taking with him a number of surgeons, physicians and nurses from the University of Pennsylvania staff.

---

**Doctor Richard P. Strong**, Professor of Tropical Diseases at the Harvard Medical School, has been appointed leader of the American Red Cross Sanitary Commission, which will assemble in Salonica about the middle of next month and proceed to the districts of Servia and Austro-Hungary which are stricken with epidemics of typhus, cholera and other contagious diseases. The commission will be supported by the Red Cross and the Rockefeller Foundation. Doctor Strong has already sailed for Greece, and the rest of the expedition will sail by the end of this month. It includes Doctor Thomas W. Jackson, of Philadelphia; Doctor Hans Zinsser, professor of Bacteriology, Columbia University; Doctor Andrew W. Sellards, Doctor George C. Shattuck and Doctor Francis B. Grinnell, of the Harvard Medical School. Doctor Nicolle, the French expert on typhus, has been invited to co-operate with the commission. Mr. Charles S. Eby, of Washington, lately connected with the United States Immigration service, is disbursing officer and secretary for the commission.

---

### RELIEF FOR BELGIAN PHYSICIANS

For Members of Committee, 56 Medical Journals, The American Commission for Relief in Belgium, and others.

Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession.

For the week ending April 17, 1915.

#### Contributions:

Fort Wayne Medical Society, Fort Wayne, Ind.....	\$ 25 00
Ramsey County Medical Society, St. Paul, Minn.....	25.00
The New Castle Physicians' Club, New Castle, Pa.....	10.00
The Harrison Co. Medical Society, Gulfport, Miss.....	25.00
The Cumberland Co. Medical Society, Portland, Me.....	25.00
The Waterbury Medical Association, Waterbury, Conn.....	13.00
Doctor William T. Hamilton, Philadelphia, Pa.....	5.00
Doctor Charles Alfred Dukes, Oakland, Cal.....	5.00
Doctor P. St. L. Moncure, Norfolk, Va.....	5.00
Doctor R. T. Stratton, Oakland, Cal.....	5.00

Doctor R. J. E. Scott, New York, N. Y.....	5.00
Doctor W. C. Cahall, Germantown, Pa.....	2.75
Doctor Richard Dewey, Wauwatosa, Wis.....	10.00
Doctor E. H. Ruediger, Manila, P. I.....	10.00
Doctor Lucretius H. Ross, Bennington, Vt.....	10.00
Mr. A. W. Burnham, Pittsburgh, Pa.....	5.00
Receipts for week ending April 17.....	\$ 185.75
Previously reported receipts.....	6,138.75
Total Receipts .....	\$6,324.50
Disbursements for week ending April 17, 80 Standard	
Boxes of food @ \$2.30.....	\$ 184.00
Previously reported disbursements:	
1,625 Standard Boxes of food @ \$2.30.....	3,575.00
1,114 Standard Boxes of food @ \$2.30.....	2,562.20
Total Disbursements .....	\$6,321.20
Balance .....	\$ 3.30

F. F. SIMPSON, M. D., Treasurer,  
7048 Jenkins Arcade Bldg.,  
Pittsburgh, Pa.

The following letter from the Pittsburgh branch of Messrs. Marwick, Mitchell, Peat & Company, has just reached the hands of the Treasurer:  
Pittsburgh, Pa., March 26th, 1915.

DOCTOR FRANKLIN H. MARTIN, Chairman,  
Committee of American Physicians for the  
Aid of the Belgian Profession,  
Chicago, Ill.

Dear Sir—

We have audited the accounts of the "Committee of American Physicians for the Aid of the Belgian Profession" for the quarter ended March 20th, 1915.

WE HEREBY CERTIFY that all donations received have been properly accounted for and applied to the purchase of provisions, and that the following is a correct summary of the Receipts and Disbursements for the period:

Receipts .....	\$5,221.50
Disbursements:	
1,625 Boxes of food.....	3,575.00
Balance on deposit in Union Trust Company, Pittsburgh, Pa.....	\$1,646.50

All but nine of the boxes of food had been delivered at the Bush Terminal, South Brooklyn, New York, to "The Commission for Relief in Belgium," as at the date of our audit, and in addition 715 boxes have been ordered, bringing the total of the boxes up to 2,340. The foregoing bank balance will be used to pay for the 715 boxes on order.

Yours truly,  
(Signed) MARWICK, MITCHELL, PEAT & CO.



# The Cleveland Medical Journal

Vol. XIV.

MAY, 1915

No. 5

## VISCEROPTOSIS AS PART OF A NEUROLOGIC SYNDROME\*

By WALTER TIMME, M. D., Associate Physician, New York Neurological Institute; Consulting Neurologist, New Rochelle Hospital and Volunteer Hospital, New York City.

Glenard, in his epoch-making work, "Les Ptoses Viscerales," states that malnutrition, dyspepsia and neuropathy are but phases of a cyclic affection of the viscera—chiefly the liver—obeying an order of succession in their progress—that of cause and effect. Elsewhere in the same work appears the statement that neuropathy, once produced, can affect the function of the liver, which in its turn again gives rise to a neuropathic state. Thus we are chasing ourselves around the stump—we are fast in a vicious circle.

What Glenard says is not new; indeed, 18 centuries ago, none other than Galen had declared that diseases of the organs of the hypochondrium gave rise to conditions in the brain by diseasing the blood, altering thereby the animal spirits.

Among the various causes given by Glenard and his followers of visceroptosis, we find the following:

*Toxins*, those of alcohol, those due to excesses in diet, and those of the puerperium;

*Infections*, among which are the puerperal, typhoidal, and malarial;

*Traumata*, chiefly of parturition and the puerperium; and  
*Emotions*, largely of fright and chagrin.

I shall endeavor to show that all of these causes, from the very concrete—the traumatic—to the highly abstract—the emotional—have a pronounced effect upon the autonomic nervous system, which is the basic causal factor of the structural changes in the viscera, and their malposition in the abdominal cavity. In other words, that the abnormal activity of the autonomic nervous system, engendered by a variety of irritants, will in a certain

\*Read before the Woman's Hospital Association, New York City, January 13, 1915.

number of individuals produce visceroptosis, together with its concomitant effects; and that therefore visceroptosis is but a part of a neurologic syndrome.

At the risk of much repetition and not a little triteness, I shall first sketch rapidly the characteristics of the autonomic nervous system and describe its physiologic activity, endeavoring to confine myself to accepted or proven facts, and to eschew far-fetched theory. It must be remembered that only within the past decade has this part of the nervous system begun to come into its rights. We are indebted primarily to Langley for our knowledge of its chief anatomical and physiological properties, and to him also for his labors in lifting the situation, as regards this highly important part of our mechanism, from one of chaos and utter confusion to its present state of comparative clearness and unity. The later investigations of H. H. Meyer, Eppinger and Hess, Gottlieb, Falta and others of the Viennese school, largely on the pharmacological aspect of the subject, have contributed enormously to a clearer understanding of the correlative activities of the various parts of the autonomic system and have brought within our reach a comprehensive and intelligent survey of the entire matter. I shall present only the salient features to you in this paper.

The autonomic or vegetative nervous system, then, is that part of the nervous system which controls the activity of the smooth muscle tissues, including the blood vessels and the heart, the organs of internal secretion, and the glands of the body, and which presides over the continuity of life and of the vital functions. It is not under the hierarchy of the cerebrospinal system, but is complementary to it. Its chief anatomical characteristics are as follows:

Arising from various ganglion cells in the cerebro-spinal axis, notably in the mid-brain, the medulla oblongata, the dorsal spinal chord, and the sacral cord, the nerve fibres emerge and pursue certain courses. Those of the mid-brain and medulla, passing from the cranial cavity in the trunks of the motor oculi nerve, the facial and chiefly the vagus, and known as the *mid-brain* and *bulbar autonomic divisions*, supply the vessels and glands of the mouth, pharynx, nose, esophagus, stomach, small intestine, part of the large intestine and liver, trachea and lungs. Those arising from the cells in the dorsal portion of the spinal



cord, emerge with the anterior roots; pass, via the white rami, to, and beyond the ganglia of the gangliated cord and the large abdominal ganglia, and supply the skin, arteries, muscles, glands, abdominal viscera and internal generative organs, and are known as the *thoracic autonomic division*, or *sympathetic system* proper.

Finally, the nerves arising from the sacral cord, and leaving the cord by the anterior root of the 1st to 3rd sacral segments, known as the pelvic nerves, pass to the ganglia of the rectum, anus, descending colon, bladder, urethra and external genitals, and are known as the *sacral autonomic division*.

The gangliated cord is simply the strand of fibres on either side of the vertebral column, consisting of a series of ganglia united by short intervening cords, and is concerned only with the thoracic autonomic or sympathetic system proper. The large ganglia situated in the abdominal cavity anterior to the large blood vessels, with their plexuses, are known as "pre-vertebral ganglia," and are stations and relays for the thoracic autonomic nerves before being supplied to the various viscera. They are almost entirely of the sympathetic division. These are the semilunar ganglia, the mesenteric and renal plexuses with their connecting strands—the splanchnic nerves from the gangliated cord, the hypogastric nerves to the pelvic plexuses, and so on. And in the viscera again we have the intrinsic plexuses, such as those of Meissner and Auerbach, in the intestine and stomach, acting as a subsidiary system in themselves.

Now, leaving the dry but necessary geography, let us devote a few minutes to some of the chief physiological characteristics, and their modifications under pathological conditions, of this autonomic system. The first point of importance is that the two great divisions, the thoracic or sympathetic proper as the one, and all the remaining ones—the mid-brain, bulbar and sacral—as the other, are both distributed, with few exceptions, to the same tissues. So that these tissues have a double innervation. The two sets of fibres, which for brevity will hereafter be called the sympathetic and autonomic, respectively, to any one tissue, are usually antagonistic in their control, so that while one causes contraction, the other causes relaxation. A few organs, for instance the bladder, seemingly have the two sets complementary and not antagonistic, for both cause the evacuation of the organ. Excessive irritability of the vagus or mid-brain autonomic, by its

depressive effect upon the opposing system, the sympathetic, produces thereby engorgement of the large abdominal and of the peripheral blood vessels, while stimulation of the sympathetic produces their contraction. There is in health a mutual give-and-take between the two systems. To show this mutually balancing property, we see that the contraction of the abdominal and peripheral vessels produces an excess of blood in the cerebral circulation. This in its turn causes vagus stimulation at the vagus nucleus in the medulla oblongata, which determines again a relaxation of the abdominal and peripheral vessels. Should this reciprocity be interrupted, as it is in many pathological states, the balance is interfered with. Any cause that operates to diminish the conductivity of the nerve in either pathway, or to increase it, without performing the same for the other, produces such a condition of instability.

Let us now, after this necessarily short exposition of the chief anatomical and physiological characteristics of the autonomic system, take up the various causes assigned for the production of visceroptosis in the beginning of this paper, and discuss their effects upon this part of the nervous system.

*First*, the toxic agents. Certain drugs and toxins have an exclusive selective action on one part of the autonomic system. Pilocarpin stimulates the vagus. Atropin and adrenalin cause an overactivity of the sympathetic. Pilocarpin will produce as a result of its vagus irritation, spasmodic asthma, perspiration, and an increase of blood in the abdominal vessels. Atropin will counteract each one of these effects by its sympathetic stimulation, and relieve the condition as a result. Other toxins, alcohol, nicotine, those of faulty metabolism, have probably similar effects. Glenard's *second* series of causes—the infections—work in a similar manner. The infectious diseases, typhoid, malaria, influenza, and a host of others in which the toxin is of endogenous origin, such as nephritis, diabetes, and exophthalmic goitre, produce changes in the irritability of the different autonomic pathways just as intensely as they would produce a peripheral neuritis in the cerebro-spinal system. So that it is not difficult to see that these toxic effects upon the autonomic or sympathetic systems would also make for a change in the tone of the blood-vessels, and the smooth-muscle walls of the viscera, and produce eventually organic structural changes in them. How we know that structural changes may occur as a result of a neu-



ritis of the autonomic fibres, is shown by the result of experimentation upon animals in which such a neuritis is experimentally produced. And this brings us to the *third* series of causes given by Glenard for visceroptosis, namely, traumata, to which these experiments, now to be described, are analogous.

I had never been satisfied that an electric stimulus, or a nerve section with stimulation of the cut end, or a temporarily acting drug, could possibly give us a deep knowledge of the activity of a continuously acting system.

Such stimulation and irritation might give us some information as to the course of fibres, their final end-organs, and their reaction to selective poisons; but we could not possibly learn therefrom what control such fibres and their centers had of the *continuity* of vital and vegetative functions. For such determinations, long-continued causes must be at work and their effects observed at the end of fairly long periods. I therefore evolved a method whereby a long-continued interference on one pathway of the autonomic nerves to one of the internal organs, namely, to the stomach, could be maintained without at the same time changing the conductivity of the sympathetic fibres which come from the solar plexus to the same viscus.<sup>1</sup> This was to ligate one or both vagus nerves in the thorax just before they descend through the diaphragm to the stomach. The ligature was only sufficiently tight to cause a pressure neuritis without entirely severing the nerve. The animals, cats, were allowed to live for 3 or 4 months thereafter. In another series of cases, the sympathetic fibres were tied off lightly and the vagus left free, and a similar period allowed to elapse. At the end of this period, examination showed that the stomach and the colon, among other results, in the animals that had the vagus tied off, were markedly enlarged and hyperplastic. Indeed, by actual count, the gastric glands in these animals had increased to about 9 million, whereas in the normal controls the number was only a little over 5 million. The length and calibre of the colon were also largely increased over the normal. The visceral walls were firm and resistive to internal tension and the blood vessels firm and elastic. In those animals in which the sympathetics were interfered with, the walls of the viscera were flabby and thin and hung almost limply in the abdominal cavity.

---

1. Timme, W.: Production of Hyperplasia, Experimental Studies on the Nervous Mechanism. *Journal Nervous and Mental Diseases*, May, 1913.

So we see that by diminishing vagus activity physically we get an abdominal condition in which the viscera are enlarged and of heightened tone, whereas by diminishing sympathetic activity the viscera become flabby, lose tone and tension and cannot maintain their position and form. These are actual results that I have obtained showing that microscopic organic changes are produced by simply interfering with visceral nerve conductivity. Other investigators have had results which in a measure are complementary to these. Lyon found "that the spleen, which is supplied by the left splanchnic from the thoracic autonomic or sympathetic proper, suffers an enlargement due to vasomotor dilatation with general relaxation of the musculature of the organ when the splanchnic is cut." These experimental conditions are comparable to the traumata produced by operative procedures, parturition, and so on, in which stretching and torsion of the abdominal ganglia and nerves produce actual changes in nerve conductivity.

We have now seen how toxins, infections and traumata can have a share through their effects upon the nervous mechanism, in the production of abdominal visceral changes. Can we predicate the same of Glenard's *fourth* cause, mere emotional activity? That is, can abstract images, subjective states of the mind such as depressions, and objective occurrences producing fright, depression or chagrin, have similar effects upon the conductivity of the autonomic or sympathetic systems, and in such a manner produce visceral changes? Of a certainty, yes, Pawlow and Cannon have both shown that in an animal in which digestion was progressing, sudden fright would at once cause a cessation of the process for an indefinite period. Similar effects can be obtained by severing or ligating the vagus. Thus my animals all retained their food in the stomach for many hours longer than the controls. Fright lasts but for a short time and therefore the effects are probably not permanent. But long-continued depression has results which though less acute, involve in their continual disturbance of the sympathetic system, structural changes. These structural changes are of the nature of a diminished tone of the abdominal blood vessels and of the visceral walls concomitant with interference of the blood supply to the viscera; and result in perverted function and loss of internal tension of the latter. Among the more recent investigators, Beehan



has stated that his investigations have shown that anger and dejection have all caused intestinal vasomotor spasm.

In many individuals, the balance of the autonomic and sympathetic systems is well preserved and readily readjusts itself after even long periods of unrest. But in less well disposed types, this is not the case. These eventually, after long-continued, or successive depressive experiences, both subjective and objective, take on the characteristics of our visceroptotic patients. They have flabby abdominal walls, their viscera are the seat of a passive stasis of blood, the viscera themselves lack tone and reactive capacity; and as a result they have constipation with alternating diarrhea; acid eructations, with pain from the overfilled and, at times, gas-distended viscus; fermentation, producing its toxins, and the whole train of attendant symptoms; and these again interfere with the proper functioning of the vegetative nervous system. Examples may be multiplied of such visceral disturbances due to emotional states, drawn from our own experiences. Even the reproduction of the image in consciousness of a previous situation or experience—be it fraught with joy or fright—is sufficient to cause a change in the heart beat, a change in the pupil, pallor of the face, dryness of the lips, nausea, diarrhea, or stimulation of the generative organs. Each of these results is due to the transfer or radiation from the cerebrum to the spinal centres of the autonomic system of the excitations produced by a subjective change in consciousness. And such irritation of the spinal centres, as we have seen, has direct concrete sequelae in the abdominal blood vessels and in the visceral walls.

Taking all the etiological causes given by Glenard for visceroptosis, we see that each one in reality is actually but a factor in the production of an instability in the autonomic nervous system on the side of diminished sympathetic activity and a corresponding increased vagus irritability. Furthermore, that this instability of the balance between sympathetic and autonomic systems produces certain structural and functional changes in the viscera involving the smooth muscle fibres of their blood vessels and visceral walls, of their motility and of their functional activity in metabolism. The two most important in the present discussion are the lack of tension in the walls of the organ and in its blood vessels, and in the consequent shrinking of the size of the organ and loss of its characteristic rotundity. Now, what are the physical bases given by Glenard for the condition of vis-

ceroptosis? The two most important are the diminution of intravisceral tension produced by the atonicity of the organ's walls and of its blood vessels; and in the shrinking in size of the viscus with a loss of its rotundity. Both of these causes we have seen may be the result of an interference with the vegetative nervous system, and both have been produced experimentally in animals by direct interference with this system. The intensity of the changes produced in the viscera is in a measure proportionate to the length of time that the balance remains disturbed, and not necessarily to the severity of the initial factor. Since the efficient cause and basis for the organic changes, therefore, is a neurologic one, and since the structural changes vary with the degree of this basic factor, I believe that the condition of visceroptosis may be regarded as part of a neurologic syndrome. The complete semiology of the syndrome would include the gastro-intestinal disturbances arising secondarily in the viscera; the pains arising in the abdomen due to the organic changes in the viscera, pressure upon the nerve-ends, kinking and other distortions in their walls; the referred pains in other parts of the body; the crises, accompanied by nausea, vomiting and collapse; and the neuropathic mental state of the patient, with its depressions, its querulousness, its mal-adjustment to environment, and its great fatiguability. How is such a condition, once it has arisen, to be combated? If I have made clear the etiology of the neurologic change underlying visceroptosis, then it must also be clear that the same group of factors can be made to produce beneficent changes in the viscera leading to their resumption of normal function. Thus, for traumata, we substitute surgical interference; for toxins, their physiological and chemical antagonists; for depressive emotional disturbances, excitatory ones. In many cases, all of these therapeutic measures are necessary, and no one of them alone is curative. In some, but one of the measures may be indicated. I have seen within the past three years cases of all three varieties. To cite them individually would be time-consuming and uninteresting. They occurred in the practice of surgeons, internists and neurologists, both here and abroad. The surgeons usually performed laparotomy and relieved the gut of kinks and adhesions, and endeavored to restore the viscus to its original position; the internists advised massage and special abdominal binders; and the neurologists applied psychoanalysis and psycho-therapy. And all three classes were benefited and a few



cured by the single procedure. But, more often, the patients, after some temporary relief, relapsed, if not to their original condition, yet to one which was unenviable. And all for the reason that it was not recognized, 1st, that surgical procedure relieved the stretching and torsion and pressure on the prevertebral ganglia and their connections, but did not restore the tone and balance of the overwhelmed sympathetic; secondly, that the internists' bandage and massage partially relieved the tension and pulling on the abdominal ganglia and plexuses, but did not help the adhesions that had formed, nor did they improve the state of mind of the patient; and, thirdly, that the neurologists' psychotherapy relieved the depression and produced the necessary sympathetic excitatory state, but could not conjure away the torsion and pinching and pulling produced on the ganglia by the adhesions and dragging of the viscera. So you can see it needs a triumvirate to combat the enemy successfully. In general it may be said that a visceroptosis brought about by emotional states can be restored by psycho-therapeutic methods alone, providing the process has not gone to the point of fixation of the viscera in their altered position; and by surgery alone, providing the original causal factor was traumatic and the condition has not persisted to the point of an actual neurosis. Such types—uncomplicated, one might call them—are the fewer. In the vast majority, then, the surgeon and the neurologist must work hand in hand. The internist is only too glad, as a rule, to retire gracefully from the scene after his supreme effort of abdominal support fails him. So that our work is complementary. And the surgeon who operates intelligently for a visceroptosis is as much a neurologic surgeon as he who does a sub-temporal decompression for the relief of intracranial pressure in cerebral neoplasm, and his results are far more happy. For he will base his work upon not only the restoration as far as possible of the displaced viscera, but chiefly upon relieving the abdominal ganglia of the sympathetic from the stretching and torsion and pressure to which they and their plexuses and connecting strands have been subjected. Only upon such relief can a permanently satisfactory outcome be based. In conclusion, then, it might be said that though visceroptosis is basically a neurologic condition, yet its rational treatment requires the aid of both surgeon and neurologist working harmoniously toward a common goal.

**SKELETAL REMAINS OF PRIMITIVE MAN\***

By N. WILLIAM INGALLS, M. D., from the Anatomical Laboratory,  
Western Reserve University, Cleveland, Ohio

The study of the origin and development of the human race, as we know it at present, opens up a most fascinating field for research, which, as soon as one gives rein to tempting speculation, becomes little less than limitless. Its chief charm may be sought in the interest man takes in himself, and its pursuance is but the logical outcome of the injunction of the Delphic Oracle. The difficulties encountered, however, are very great, and so far we have only been able to catch random glimpses of a long and venerable ancestral line, receding and elusive as the will-o-the-wisp; a seemingly interminable procession emerging slowly and painfully from the darkness of a past whose antiquity we are just beginning to fathom.

The chief difficulty is, of course, the dearth of material, in which respect, however, our subject shares the common lot peculiar to paleontological studies. A second source of uncertainty is found in our inability, in very many cases, to assign to any definite geological horizon the fossil forms which occasionally come to light, and so to determine the age and proper sequence of these various types. It would seem almost as if each new discovery but enhanced the antiquity of man, and if, as we have every reason to believe, we can trace him, almost unchanged in body, far back into the great Ice Age, in a past how much more remote must we seek out the sparse and scattered remnants of his early lineage. His appearance upon the earth is by no means so recent as was once supposed. He can look back over unnumbered generations; he was present as the seas and continents were taking on their now familiar forms; he witnessed the titanic revolutions of the Glacial Period, saw forms about his evolve and become extinct. Of the countless thousands of our early ancestors, who eked out the little span of their simple lives in the long, wild reaches of the Glacial Epoch, little now remains. Skeletal fragments, imbedded in some ancient beach or river-bed, or buried deep in the accumulating débris of some sheltered rock-retreat, at once a habitation and a tomb, these are all we have.

---

\*The fourth and last paper in a symposium on Primitive Man, given at the Academy of Medicine, December 11, 1914.



The knowledge thus far gleaned from these meager remains indicates that we must look for man's separation from his anthropoid cousins in the geological period preceding the present, i. e., somewhere in the Tertiary. As is the case with so many forms, so also with man. We meet him first when he had attained a distinctively human stage of development, about the dawn of the Pleistocene, while behind him yawns the deep gulf of the upper Tertiary, which separates him from his next akin, the anthropoids, and to bridge which we must have recourse to intermediate, hypothetical types. He is a product of the Old World, and appears first in the New, as he did for a second time in another role, thousands of years later, an immigrant.

Rather more than twenty years ago, 1891-92, the discovery was made of what purported to be the long-heralded "missing link." A calvaria, a femur and a few teeth had been unearthed by Dubois in the bank of the Bengawan river near Trinil in Java. The age of the strata in which the remains were found may be taken as late Pliocene or early Pleistocene. The bones were found at a depth of 50 feet, and the skull-cap and thigh-bone were more than 40 feet apart. The calvaria is that of a thick, massive skull of no small proportions, characterized by prominent brow-ridges, considerable post-orbital narrowing, and a strikingly flat cranial vault. It possesses no well-marked ridges for the attachment of the powerful jaw-muscles, which might be expected in association with such a type of skull, particularly in the adult male. It is the size of the calvaria and the proportionately large brain which it covered from which arise many of the difficulties involved in the interpretation of this fossil. The cranial capacity may be estimated at about 850 c.c., which would give it an intermediate position between the upper limit of the Simiidae and the lower limit of the Hominidae. The brain-weight may have been about 750 gm., rather more than half the modern weight. It is not easy to say just what the missing parts—face, jaw and base of the skull—were like. The supra-orbital torus would indicate even more than do the very large teeth that the jaw and lower part of the face were strong and massive, prognathic, although it must be admitted that indications of a very powerful temporal muscle are not present. This might mean a young animal, but the thickness of the bones, the synostosis and other features are not in harmony with such an explanation, but we may suppose that the remains are those of a

female. The fragment of skull presents features which remind one of *Hylobates* (Gibbon), but the size and weight of the body in such a case would be very great, and neither the skull and



Fig. 1

Right lateral view of cranial fragment of *Pithecanthropus erectus*.\*



Fig. 2

Same view of calvaria of Spy I.

still less the femur admit of such an interpretation. The height and weight have been estimated at about 5 ft. 6 in., and 165 pounds respectively.

In general the skull-cap is intermediate between the *Simiidae* and the *Hominidae*, while the femur in its size and general character is more distinctly human. For these reasons the possessor was styled by Dubois, *Pithecanthropus erectus*, although his thigh-bone does not compel us to conclude that he walked upright, howbeit this posture certainly preceded the cerebral development distinguishing the *Hominidae*. The exact zoological status of this interesting creature is not easily determined; it may be readily granted that he occupies a position between the *Anthropoid Apes* and *Man*, but he is probably not on the direct line of human descent, having left the primitive human stock later than did the *Anthropoids*, but very soon becoming extinct.

When we leave this strange being, *Homo javanensis*, as he has been incorrectly called, we find a wide gap separating us from lowest representatives of the genus *Homo*. A gap roughly comparable with that which intervenes between the apeman of Java and the common ancestor of both forms. The next type we meet is distinctly human, it is *Homo neanderthalensis* (*primigenius*, *amentalis*),

The oldest remains of this primitive stock, which are pre-neanderthaloid if not even pre-human, have been preserved for

\*Drawings 1 to 9, inclusive, are all on the same scale, one-fourth natural size.



us in a massive jaw, found imbedded in the sands of an ancient bed of the Neckar river, near Mauer, not far from Heidelberg. The jaw lay under about 80 feet of sand and other deposits, the sand having been laid down by the river soon after the Pleistocene began, perhaps in the first interglacial period. This mandible, known as the Heidelberg or Mauer jaw, is a most remarkable specimen, since there are imbedded in this huge bone a dentition not so very unlike the modern type as regards the size of the individual teeth and the shape and length of the dental arc. It is the bone rather than the teeth which attracts our attention. The ramus is very broad, offering a wide insertion for a powerful masseter; the sigmoid notch is shallow, the coronoid correspondingly short. The body of the mandible is rather high, and a chin is lacking. The thickness of the bone is very considerable, much more than would be required by the size of the teeth, i. e., the teeth have progressed more than the jaw. The result is that although the dental arc is wider than in many recent jaws, the space available in the floor of the mouth for complicated movements of the tongue is much less. The genial tubercles on the inner aspect of the symphysis are, in their form, reminiscent of the simian chin-plate, and we may well suppose that there was little or no power of speech. The Heidelberg mandible differs from the simian in that the dental arc is absolutely and relatively wider and divergent behind instead of parallel or convergent. This width is correlated with the side-to-side movements of the jaw, which are rendered possible by the reduction of the canines and changes in the tempero-mandibular joint, and which are indicated by the wearing down of the crowns of all the teeth. The size and shape of the mandible throw much light on the general features of the rest of the skull, which we may take to have been much like the lower neanderthal forms, but rather more massive



Fig. 3  
The Heidelberg or Mauer jaw.



Fig. 4  
Remains of jaw of Spy I.



Fig. 5  
Jaw of recent man, male, black. Same as Fig. 7.

and brutish, i. e., more primitive. *Homo Heidelbergensis* shows that the human mechanism of mastication was evolved very early, doubtless in Pliocene times.

With the advent of Neanderthal man, probably somewhere early in the Pleistocene, we first have a firm foundation under our feet and literally feel more at home. This sturdy, uncouth creature is represented by fairly numerous skeletal fragments, and indeed from now on the material is relatively abundant. We are acquainted with the earlier and later types, as well as with the differences of age and sex. We can only call attention briefly to a few representatives of this interesting race, and shall, moreover, confine our remarks for the most part to the skull, which is not only the most instructive for our purposes, but is often the only portion of the skeleton which has been preserved, even in a fragmentary condition.

The Gibraltar skull, the first discovery of the neanderthal race, is of uncertain age, probably early Pleistocene. The face and base of the cranium are very well preserved and we have no difficulty in recognizing an early type of neanderthaler. The bones of the vault are thick and heavy, there is a well-marked torus supraorbitalis, some post-orbital narrowing and a low cranial arc. In the face the palate is short and wide, the teeth are primitive and the orbits large. The cranial capacity is small and the prominent supraorbital ridges only serve to accentuate

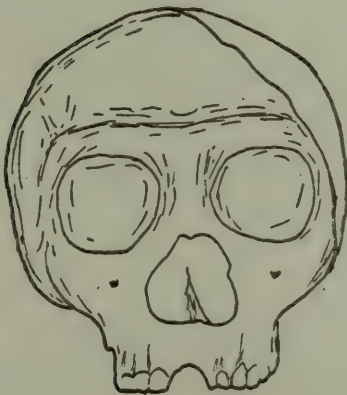


Fig. 6

The Gibraltar skull, a low Neanderthal type. The left side of the vault of skull is defective.

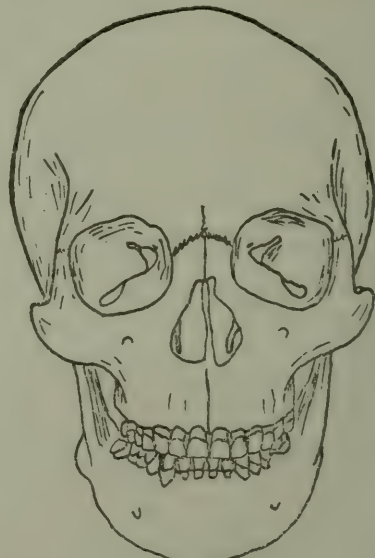


Fig. 7

Similar view of skull of adult male, black; for comparison.



the low brain-case. Indeed, this Gibraltar man (*Homo calpicus*), or woman, according to some, seems to betray more brutishness than any other skull we know. Later representatives of this primitive folk, who seem to have been dominant in the second Inter-glacial Period and to have persisted into the next, present a certain amelioration of the coarse and animal features of the earlier types, as well as a very striking increase in the size of skull and in the cranial capacity.

The Neanderthal skull, which gave its name to the race, is also one of the earlier discoveries. The calvaria and a few other bones were found in 1857, imbedded in the loam of a small cave, high up on the south side of a deep gorge, the Neanderthal, in the valley of the lower Rhine. Much of our knowledge of primitive man we owe to the valuable discoveries which have been made in the numerous caves and rock-recesses of Western Europe, in the valleys of the rivers coursing westward to the sea. Whether habitations or places of burial, they have yielded many skeletal remains, as well as numerous specimens of man's early handiwork.

The Neanderthal skull presents the same general features as that of Gibraltar, but certain of them are less accentuated on account of its greater capacity. The calvaria found in caves at Spy in Belgium show an even greater increase in size. The skeletons discovered at Le Moustier and La Chapelle-aux-Saints in the valley of the Dordogne in France are of special interest.

The former, *Homo mousteriensis*, was a male of sixteen or seventeen years, who had been buried in a sleeping posture in the floor of the cave; this is stated to be the earliest known interment. The remains from La Chapelle-aux-Saints were those of an old man, in which the coarse, rugged features are much more pronounced than in his younger countryman. The skulls are remarkable on account of their great capacity, 1600 c.c. or more, so rivalling if not surpassing the modern average. All these skulls, and others, as the numerous fragments from Krapina in Croatia might be added, show the same prominent brow-ridges, most conspicuous in the earlier forms and in skulls from aged males. The teeth are strong, the palate large and wide; evidences of powerful jaw and neck muscles are present. The cranial capacity is variable; low in the more primitive types (ca. 1100 c.c.), it attains most impressive proportions at a later

period (ca. 1600 c.c.). Sweeping judgments, however, based solely on cranial capacity are certainly very precarious, for we know the wide range of variation to which it is subject at the present time. Although between the earlier and later neanderthals there is a very distinct increase in size of skull, any attempt to arrange all these skulls at once in order of their size and geological age would be as hopeless as it would be unscientific. What significance may attach to differences in brain-weight, we do not know, even for modern races, and still less are we in a position to pass judgment on a people of whom we have so little knowledge. *Homo primigenius* had a wide distribution in Europe, but as yet there is no evidence of his presence elsewhere. His pre-human forerunners and his earliest home are alike unknown. He flourished about midglacial times—second warm interval—but passes from our sight during the temperate period which followed the third glaciation.

Neanderthal man was a short, sturdy, bull-necked creature; his head, with massive, protruding jaws and broad nose, with eyes deep-set under shaggy brows, was carried well forward on a short, thick neck. Much of his leisure time might have been spent in a squatting position, and he was probably provided with a fairly serviceable covering of hair. Undersized, and short of limb but large of head, with slouching gait and uncouth mien, patiently chipping his stubborn flints at the entrance of his cave,

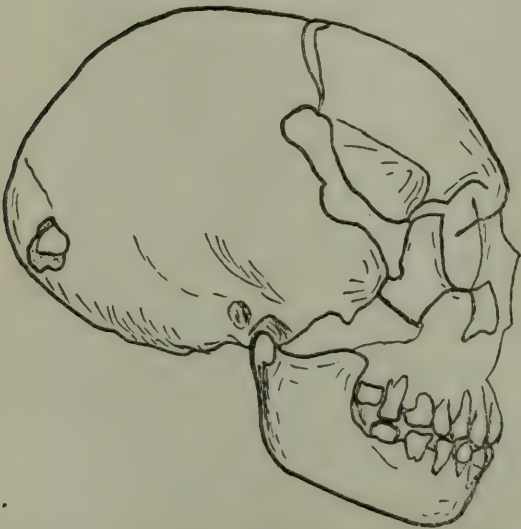


FIG. 8

*Homo mousteriensis*, Neanderthal man at his best. Face largely restored.

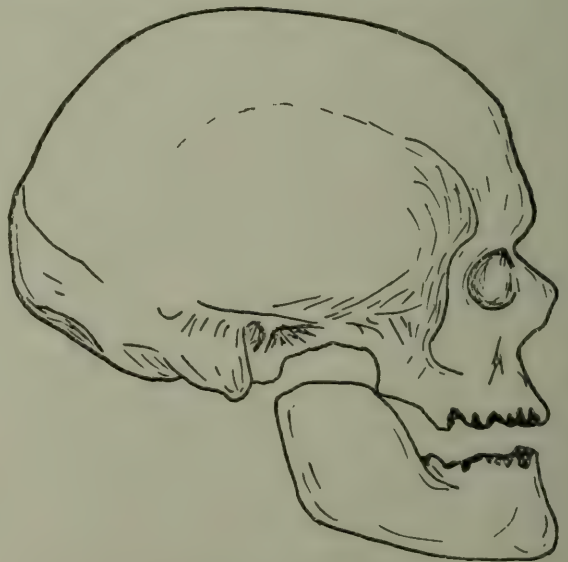


Fig. 9

Cro-Magnon, one of the Reindeer-hunters.  
An example of the modern type, late-glacial *Homo sapiens*.



he must have presented a peculiar appearance amid the wilds of his pleistocene home. Just what became of him we do not know. It may well be that he met the same fate which has overtaken so many later tribes and peoples. With the incoming of a better, stronger race, he was either extinguished or exiled, weighed in the balance of Nature and found wanting; his patrimony divided among strangers. On the other hand, the possibility of his having mingled with the newcomers must not be overlooked. He might so have gradually lost his identity by the admixture of other blood, and even this might not have insured him against virtual extinction. The most we can say at present is, that as a distinct type he is lost from view toward the close of the Pleistocene.

From this time on we meet with other types of man, of uncertain origin, but quite different from, and much in advance of, the old Neanderthaler. These new arrivals are well represented both in the remains of their skeletons and in their various implements and works of art. These early representatives of *Homo sapiens*, for such we must consider them, lived at the same time as the last stragglers of that vanishing race, *Homo primigenius*. They were men of somewhat greater stature and better form, and possibly carried themselves rather more erect. Their heads were long, but not especially high, and we miss the great brow-ridges and thick, ponderous skulls, the massive teeth set in protruding jaws, and all the forbidding coarseness of earlier times. They were essentially of the modern type, as can be seen from their finer features and high, smooth foreheads. Then as now there was much variation; how much was individual and how much racial, we cannot always say. Certain features presented by the skull and bones of the extremities have led many observers to conclude that in some cases we are dealing with a negroid race—from the Grimaldi cave near Mentone, France. In others again the short, broad face and low, compressed orbits are suggestive of Mongolian affinities. But the whole question of the origin of different races is too dark and tangled to be even touched upon here. Some writers even go to the extremity of denying their close relationship and origin from a common human or even humanoid ancestor; but find in them rather genetic affinities with the great anthropoids, so linking up Neanderthal man with the Gorilla, Aurignacian man with the Orang.

The modern type of man appears suddenly, and substantially as we find him today, without any of the earlier stages of his development, such as we have of *Homo primigenius*. Whether indigenous in Europe or an invader, we have no inkling; but we may be sure that behind him lies a long ancestral line, cradled, it may be, somewhere in the vast resources of Asia.

One of these was the man of Brünn (Moravia), a representative of Aurignacian man, the Loesshunters. He was a long-headed, stockily built individual, of only medium height, and possessed of a very fair cranial capacity. He knew how to carve both weapons and ornaments in bone and ivory, and was not insensible to personal adornment. With his superior brain, even if it had been smaller, he may have been a factor in the impending extinction of Neanderthal man. The Loesshunters may be placed in the third Interglacial period, later than the Grimaldi race, but contemporaries of the last Neanderthals and of other races of the modern type.

Of these last, one in particular deserves mention. The Cro-Magnon race, or the Reindeer-hunters, were the dominant race of Western Europe as the Glacial Period came to a close with the long Reindeer Epoch. They were a large, powerfully built people, with short, wide faces and a well-developed chin. Their skulls were long and narrow, the orbits remarkably low. To a splendid and commanding physique, such as had not been seen before, they added a skull often exceeding the modern average in size, and which in certain cases attained the almost incredible capacity of 1800-2000 c.c. The quality of these large brains is attested by their wonderful art, preserved in numerous pictures and carvings. Some writers see in this exceptional people traces of Neanderthal man, others find certain negroid traits. Whatever may be his origin, his blood may still course in the veins of those who now occupy his ancient hunting grounds.

Passing mention may be made of two other discoveries which have at least furnished material for discussion, if they have not contributed materially to the extent of our knowledge. The so-called Galley Hill Man—*Homo fossilis*—is represented by a fragmentary skull and jaw found in the 100-ft. terrace of the river Thames. He belongs to the modern type, closely resembling the man of Brünn. He had the same long, narrow head and rather



low stature, but his brain was probably somewhat lighter. In the work of his head and hands, as expressed in the abundant flint implements found in the same strata, he was certainly inferior to his Moravian counterpart. As to his age, there is very grave uncertainty; he has been assigned to mid-glacial times, even antedating Aurignacian man. If the claims which have been put forward for his great antiquity could be substantiated, then he might well have been a forerunner of Aurignacian man. But this ancient Briton of the Thames valley was not sensibly more primitive than the Loesshunter of Moravia, and we would only have to delve into the past more deeply than ever for traces of early types. Indeed, the essentially modern characters of Galley Hill man have been used as arguments against assigning him to a period so remote.

The recent discovery at Piltdown, in Sussex, England, of cranial fragments and a piece of mandible, has occasioned lively and even acrimonious debate. The original possessor of these broken bits has been elevated to the dignity of a new genus, *Eoanthropus* (*dawsoni*). The thick, massive bones suggest the neanderthal crania, but other distinctive features of that race are absent; the mandible is, in certain respects, strikingly simian. The skull was probably shorter and broader than in Aurignacian man, and its capacity distinctly less. The age of *Eoanthropus* is as uncertain as that of *Homo fossilis*, but he is doubtless much the older and may have lived in early Pleistocene times. That in Piltdown man—but he is hardly human—we have a direct ancestor of modern man, it is impossible to say. If not on the direct line of human descent, he is certainly a later offshoot than *Pithecanthropus*, perhaps even later than *Homo primigenius*, who so far outstripped him and who in turn was left far behind by *Homo sapiens*.

Amidst the mass and maze of fact and fancy pertaining to primitive man, there emerge, ever more clearly, two great, outstanding points. These are, the very early breaking-up of the parent-stock into different races, and an antiquity hitherto undreamed-of in our philosophy, beside which all recorded history is only as a tale that is told. Of the latter, we could have formed merely the vaguest *à priori* judgments; concerning the former, our knowledge of animal evolution in general should have instructed us. If, by virtue of an exceptional cerebral develop-

ment, man has arrogated to himself the very pinnacle of animate creation, and if, by this unique distinction, he has been enabled to shake off some of the sordid dust of toiling centuries, it is only to find that he is indissolubly linked with all which has gone before; an integral part of a stupendous whole; born of, and subject to, the same inexorable laws.

---

**Reason for the Faith Within Us.**—"Sometimes, though not often, we are asked," says *The Journal of the American Medical Association*, "why *The Journal* does not 'let up' on the subject of fraud in medicine, especially as it applies to the 'patent-medicine' evil. Our best answer to such an inquiry would be to ask the person making it to spend a few days in this office and read some of the letters that come from the public and the profession relative to the subject. This, of course, is impracticable, and the best we can do is, occasionally, to give such letters publicity. Many of the communications of this type—and therein lies the tragedy of it—are privileged and could not with propriety be printed. Some, however, are available. The two letters that follow are from widely different sources, the first from a physician in Tennessee and the second from a woman in New Hampshire. While, in a way, they deal with subjects that are as widely separated as their geographical sources, yet they both point in the same direction and they both call for a common remedy. Here is the letter from Tennessee:

"The exposure of Wine of Cardui alone is enough to cause any doctor who has the interest of humanity at heart to subscribe to *The Journal*. If he can't justify it in any other way, call it a charity. Many a poor, hard-working man has come home at night, compelled to spend his last dollar for the nostrum in order to satisfy his suffering wife's mind—and keep down the gossip of the neighbors who might say he refuses to buy medicine for his wife—even though he knows it is a fake of the eighteen-carat type. That man has been saved untold mental anguish, and the absolute necessities of life, in having you come to his rescue, May *The Journal* keep up the fight. We are with you."

"The point raised by the doctor exposes the rottenness of the nostrum business from a new angle. There is no doubt that the problem he presents is by no means an uncommon one, especially in the rural districts, and among the poorer classes. Nostrum manufacturers frequently refer to their preparations as the 'poor man's medicine.' In the same way the beneficiaries of the low-grade commercial medical schools have called these institutions the 'poor boys' school'; and in the same way, too, the manufacturers of adulterated foods and sophisticated food stuffs try to justify their products by referring to them as the 'poor man's food.' The argument is as fallacious in one as in the others. The woman from the New England village wrote:

"My husband has had tuberculosis of the spine for two years and used the 'cast treatment,' but was persuaded to use 'Yonkerman's Tuberculozyne,' taking four, yes, I think five treatments as a strength and health builder, but quit it three or four months ago, as it did not cure. . . ."

"Yonkerman is a horse-doctor, and his 'Tuberculozyne' is one of those wretched consumption cure frauds that lure the ever-hopeful consumptive to destruction. It is letters of this kind, coming in almost daily, that give an all-sufficient answer to the query propounded at the outset."



**SOME OF THE EFFECTS OF THE HARRISON ANTI-NARCOTIC LAW IN CLEVELAND. (ANALYSIS OF CASES OF DRUG ADDICTION TREATED IN THE OBSERVATION DEPARTMENT OF THE CLEVELAND CITY HOSPITAL)\***

By H. H. DRYSDALE, M. D., Cleveland

For many years the United States, being fully aware of the dangers arising from the increasing traffic in habit-forming drugs, has been diligently working on a plan to rid itself of this perilous and unnecessary evil. Congress brought the matter to an international issue by arranging for a conference of representatives of thirteen nations. This commission met in Shanghai, China, in 1909, and at the Hague, in 1911. In 1912 an agreement was signed outlining a program for the strict control of both national and international traffic in certain narcotic drugs.

To carry out America's part of this obligation three bills were introduced into Congress. The first, No. 1966, prohibited the importation of opium for any other than medicinal purposes. The second, known as No. 1967, prohibited the manufacture of smoking opium in the United States. Both of these bills were passed, but occasioned very little comment, as few were engaged in the importation of opium and none were known to manufacture it for smoking purposes. The third bill, known as the Harrison Law, was enacted December 13th, 1914, to become effective March 1st, 1915. This bill, as you well know, restricts the traffic in opium and cocain to those engaged in legitimate businesses, and therefore concerns the physician as prescriber and dispenser.

Following the enactment of this now famous law, the newspapers everywhere predicted in glaring type that a deluge of crazed habitués, suddenly deprived of their accustomed narcotic, would come out from under cover and become public charges. It was feared that a reign of savagery and crime would sweep the country, leaving death and suicide in its trail. Municipal authorities generally felt the force of such hysterical predictions and prepared to cope with what they naturally thought would be an almost insurmountable situation. Cleveland was no exception in this respect, and the officials of the City Hospital were ready and equipped to accept a large number of addicts long before the Harrison Law went into effect.

---

\*Presented before the Cleveland Academy of Medicine, April 30, 1915.

TABLE No. 1

Hospital Case Number	Sex	Color	Age	Occupation	Conjugal Condition	Nationality	Drugs Used	Manner of Administration	Period of Addiction	Origin of Habit	Daily Dosage	No. of Previous Attacks	Days in Hospital	Remarks
26964	M	W	23	Huckster	S	Hebrew	Opium Opium Heroin	Smoked Mouth Snuff	1 yr., 6 mos. 1 yr., 6 mos. 1 yr.	Indulgence	4 grs.	2	28	.....
26987	M	W	22	Shipping Clerk	S	American	Heroin Morphin	Snuff Hypo.	2 yrs. 9 mos.	Indulgence	3½ grs.	0	30	.....
27006	F	W	19	Housework	M	American	Heroin	Snuff	13 yrs.	Indulgence	5 grs.	0	28	.....
27010	M	W	26	Bartender	S	Hebrew	Opium Heroin	Smoked Snuff	4 yrs.	Indulgence	5½ grs.	1	28	.....
27017	M	W	22	Conductor	S	Hebrew	Heroin	Snuff	1 yr., 6 mos. 2 yrs.	Indulgence	? ?	0	21	.....
27036	M	W	23	Baker	S	Hebrew	Heroin Cocain Morphin	Snuff Hypo. Hypo.	2 yrs. 2 yrs. 2 yrs.	Indulgence	1 gr. ? 20 grs.	1	35	.....
27037	M	W	23	Conductor	S	American	Morphin	Hypo.	1 yr., 6 mos.	Indulgence	?	0	8	Escaped
27079	M	W	20	Teamster	S	American	Heroin Cocain	Snuff Snuff	1 yr., 4 mos.	Indulgence	3 grs. 4 drs.	0	5	Escaped
27094	M	W	23	Laborer	S	American	Heroin Morphin	Snuff Mouth	1 yr., 2 mos. 1 yr., 2 mos.	Indulgence	2 grs. 14 grs.	0	34	.....
27122	M	W	22	Laborer	S	Italian	Cocain	Snuff	1 yr.	Indulgence	?	0	22	.....
27183	M	W	33	Painter	S	American	Morphin	Hypo.	15 yrs.	Indulgence	60 grs.	several	40	.....
27238	M	W	39	Waiter	S	American	Morphin	Hypo.	6 yrs.	Indulgence Penitentiary	18 grs.	0	35	.....
27398	M	W	22	Clerk	S	American	Heroin Morphin	Snuff Hypo.	4 yrs. 4 yrs.	Indulgence	5 grs.	1	39	.....
27507	M	W	23	Barber	S	American	Morphin	Hypo.	5 yrs.	Rheumatism J no. Hopkins Hospital	30 grs.	0	31	.....
27612	F	W	65	Laundress	S	American	Morphin	Hypo.	27 yrs.	Indulgence	10 grs.	0	26	.....



27639	M	W	24	Clerk	S	American	Opium Heroin Morphin	Smoked Snuff Hypo.	? 6 mos. 6 mos.	Indulgence	?	0	23	-----
27699	M	W	35	Tailor	S	Hebrew	Heroin Morphin	Snuff Hypo.	2 mos. 7 mos.	Crisis of Tubes	20 grs.	0	33	-----
27728	M	W	25	Shoemaker	S	Assyrian	Heroin Morphin	Mouth Hypo.	2 yrs. 14 yrs.	Fractured Ribs	16 grs. 30 grs.	0	40	-----
27740	F	W	46	Clerk	W	American	Morphin	Mouth	?	?	?	0	29	-----
27744	M	W	24	Clerk	S	American	Opium Heroin Morphin	Smoked Snuff Hypo.	7 yrs. 3 yrs. 2 yrs.	Indulgence	12 grs.	0	28	Escaped
27745	M	W	22	Bellboy	S	American	Heroin	Snuff	3 yrs., 6 mos.	Indulgence	10 grs.	0	25	-----
27802	M	W	26	Laborer	S	American	Heroin Morphin	Snuff Hypo.	3 yrs.	Indulgence	30 grs.	0	22	-----
27816	M	W	24	Cutter	S	Hebrew	Morphin	Mouth	6 mos.	Indulgence	3 grs.	0	22	-----
27824	M	W	18	Steamfitter	....	Hebrew	Heroin Morphin	Snuff Hypo.	1 yr. 2 wks.	Indulgence	16 grs.	0	34	-----
27826	F	W	62	Wife	M	Finnish	Morphin	Mouth	Many yrs.	Indulgence	?	0	30	-----
27827	F	W	19	Prostitute	S	American	Heroin	Snuff	2 yrs.	Indulgence	8 grs.	0	41	-----
27848	F	W	44	Wife	M	American	Heroin Laudanum	Mouth Mouth	9 yrs. 1 yr.	Indulgence	4 drs.	0	34	-----
28122	M	W	56	Attorney	M	American	Morphin	Hypo.	1 yr.	Operation Rectal Fissure	6 grs.	1	11	-----
27846	M	W	42	Machinist	S	American	Morphin Cocain	Hypo. Hypo.	10 yrs. 8 yrs.	Indulgence	10 grs.	several	41	-----
27847	M	W	24	Clerk	S	American	Morphin Heroin	Hypo. Snuff	7 yrs. 2 yrs.	Indulgence	45 grs.	0	26	-----
27853	M	C	27	Porter	S	American	Opium Morphin	Smoked Hypo.	12 yrs. 3 yrs.	Indulgence	30 grs.	0	15	-----
27854	M	W	35	Salesman	M	American	Morphin	Hypo.	13 yrs.	Dysentery in Philippines	60 grs.	several	41	-----
27868	M	W	24	Clerk	S	Hebrew	Morphin Heroin	Hypo. Snuff	4 yrs.	Indulgence	30 grs.	7	24	Escaped

TABLE No. 1—Continued

Hospital Case Number	Sex	Color	Age	Occupation	Conjugal Condition	Nationality	Drugs Used	Manner of Administration	Period of Addiction	Origin of Habit	Daily Dosage	No. of Previous Attacks	Days in Hospital	Remarks
27871	F	W	37	Housework	S	American	Morphin	Hypo. Snuff	13 yrs. 3 yrs.	Following Operation	?	0	27	.....
27889	F	W	36	Actress	S	American	Morphin	Hypo.	11 yrs.	Indulgence	?	0	26	.....
27891	M	W	23	Waiter	S	American	Heroin Morphin	Snuff Hypo.	3 yrs. 3 yrs.	Indulgence	20 grs.	3	16	Escaped
27895	M	W	25	Bellboy	S	American	Morphin	Hypo.	6 mos.	Indulgence	?	0	19	.....
27931	M	W	25	Tailor	S	Scotch	Morphin	Hypo.	1 yr., 6 mos.	Osteo-mylitis	30 grs.	0	37	.....
27933	M	W	30	Theatrical Man	M	American	Opium Heroin Morphin	Smoked Snuff Hypo.	4 yrs.	Indulgence	25 grs.	0	11	Escaped
27942	F	W	22	Waitress	S	American	Morphin	Hypo.	7 yrs.	Following Surgical Operat'n	30 grs.	0	28	.....
27945	M	W	23	Sailor	M	American	Heroin Morphin	Snuff Mouth	1 yr.	Indulgence	8 grs.	0	9	Escaped
27946	M	W	23	Farmer	M	American	Heroin	Snuff	11 yrs.	Indulgence	60 grs.	0	9	Escaped
27949	F	W	25	Prostitute	M	American	Heroin	Snuff	3 yrs.	Indulgence	8 grs.	0	35	.....
27983	M	W	31	Salesman	S	American	Morphin	Hypo.	2 yrs., 6 mos.	Indulgence	20 grs.	0	32	.....
27984	M	W	32	.....	S	American	Morphin	Hypo.	6 yrs.	Glaucoma	30 grs.	0	18	.....
28022	M	W	34	Bartender	S	American	Morphin	Hypo.	2 yrs.	Indulgence	16 grs.	0	15	.....
28031	M	W	32	Machinist	S	American	Morphin Heroin	Hypo. Hypo.	16 yrs. 1 yr.	Injury to Leg	30 grs.	2	15	.....
28032	M	W	25	Cook	S	American	Heroin Morphin	Snuff Hypo.	8 yrs.	Headaches		2	15	.....



28046	M	W	47	Laborer	M	American	Morphin	Hypo.	Over 1 yr.	Indulgence	?	0	29	.....
28064	M	W	29	Tailor	S	American	Morphin Cocain	Hypo. Snuff	2 yrs.	Indulgence	15 grs.	0	26	.....
28066	F	W	39	Housework	M	American	Morphin	Mouth	5 yrs.	Asthma	3 grs.	0	28	.....
28078	M	W	49	Ironworker	M	American	Morphin Cocain	Hypo.	21 yrs.	Following Minor Surgical Operat'n	20 grs.	1	13	.....
28121	M	W	46	Clerk	W	Hebrew	Morphin	Hypo.	8 yrs.	Pneumonia	15 grs.	0	17	.....
28131	M	W	39	Salesman	M	Hebrew	Heroin	Snuff	1 yr., 4 mos.	Indulgence	3 grs.	0	9	.....
28132	M	W	33	Salesman	M	Hebrew	Heroin	Snuff	3 yrs.	Luetic Ulcers	4 grs.	0	13	.....
28134	F	W	23	Wife	M	American	Morphin	Hypo.	2 yrs.	Gall Stones	10 grs.	0	11	.....
28193	F	W	55	Wife	M	American	Morphin	Hypo.	20 yrs.	Rheumatism	30 grs.	0	6	.....
28206	F	W	46	Wife	M	American	Morphin	Hypo.	25 yrs.	Headaches	20 grs.	6	7	.....
28231	F	W	23	Waitress	S	American	Morphin Cocain	Hypo. Hypo.	2 yrs.	Following Surgical Operat'n	7 grs.	1	4	.....
28307	M	W	38	Machinist	M	German	Morphin	Hypo.	5 yrs.	Injury, Fell from Balloon	10 grs.	1	2	.....
27919	M	W	21	Salesman	S	Hebrew	Opium Morphin Heroin	Smoked Hypo. Snuff	4 yrs. 6 mos. 6 mos.	Indulgence	10 grs. ? 10 grs.	1	22	.....
27822	M	W	68	Housework	S	American	Morphin	Mouth	34 yrs.	Intestinal Disease	30 grs.	0	27	.....

The above statistics were carefully compiled by Doctor Thos. K. Gruber, Assistant Superintendent, City Hospital.

At first it actually seemed as if the public press had not over-estimated the extent of the problem that was about to confront us, for very soon after January 1st, 1915, a considerable number of these submerged social wrecks came out of their depraved haunts, writhing with pain and pitifully appealed for help. Most of them frankly admitted that the venders who had supplied them with their "dope" had either been driven out of business by fear of the strong arm of the Federal official or had placed a price on opium, cocain and heroin which was prohibitive. Unable longer to withstand the strain, their resources exhausted, and practically all avenues of escape closed to them, they one by one either surrendered to the police or sought protection from other authorities.

The City Hospital of Cleveland has been keeping careful records of cases of this kind which have been committed to the Observation Department by Judge Alexander Hadden, of the Probate Court, during January, February and March, 1915. It is only by gathering records of such cases that we are able to obtain some idea as to the results of the Harrison Law. The following statistics, collected thirty days after the beginning of its enforcement, are therefore timely:

(See Table 1 on pages 354, 355, 356, 357.)

TABLE 2  
ADMISSIONS TO CITY HOSPITAL

	Males	Females	Total
Under treatment January 1st, 1915.....	3	1	4
Admitted January 1, 1915 to March 1, 1915.....	17	3	20
Remaining March 1st, 1915.....	8	2	10
Admitted March 1st, 1915, to April 1st, 1915.....	29	13	42
	<hr/>	<hr/>	<hr/>
Total admitted January 1, 1915 to April 1, 1915....	46	16	62

During the year 1914, the number of addicts treated at the City Hospital was 66.

TABLE 3  
DISPOSITION OF CASES

	Males	Females	Total
Discharged recovered.....	31	11	42
Escaped .....	8		8
Remaining April 1st, 1915.....	7	5	12
	<hr/>	<hr/>	<hr/>
Total .....	46	16	62

Of these, forty were single; eighteen married, including husband and wife; three were widowed. Sixty-one were white; one colored. Three were under twenty years of age; thirty-one



were in the twenties. The youngest patient was a lad of 18. The oldest a maiden lady, aged 68. The former had snuffed heroin for one year prior to admission to hospital. The latter had taken thirty grains of morphin daily, by mouth, for a period of thirty-four years. She has not entirely recovered and probably never will. Her dosage, however, has been reduced to  $\frac{3}{4}$  of a grain, four or five times daily. Attempts at further reduction have invariably precipitated dangerous symptoms of collapse, due, no doubt, to the enfeebled resistance incident to her advanced years. It is more than likely that this patient will require morphin or its equivalent for the remainder of her life.

In three cases only, the habit had persisted for one year or less. The majority were chronic addicts. Twenty-four of them had been victims for over five years; fourteen for ten years or more.

TABLE 4  
DRUGS USED

	Males	Females	Total
Morphin .....	27	13	40
Laudanum .....		1	1
Opium smoking .....	7		7
Heroin .....	26	3	29
Cocain .....	6	1	7

Thirty-five of the above cases were addicted to one drug; twenty-one used two drugs, and six used three. One patient, a woman, aged 44, was the victim of the laudanum habit, taking four drams daily during the twelve months prior to admission. Her recovery was rapid.

TABLE 5  
MANNER OF ADMINISTRATION

	Males	Females	Total
By mouth .....	7	5	12
By hypodermic .....	34	7	41
By snuffing .....	26	3	29
Smoking opium .....	7		7

Twenty-eight patients snuffed heroin or "happy dust," so called. One administered it by mouth and one by hypodermic. Heroin, by the way, was at one time considered a non-habit forming drug, and in France it was lauded as a cure for the morphin habit.

NATIONALITY OF HABITUÉS  
TABLE 6

Finland .....	1
Germany .....	1
Hebrew .....	12
Italy .....	1
Scotland .....	1
Syria .....	1
United States .....	45
Total .....	62

TABLE 7  
ORIGIN OF HABIT

Indulgence (curiosity) .....	41
Following surgical operations .....	5
Following bodily injuries .....	3
Ill Health (medication) .....	13

Indulgence in the above instance applies to patients who became addicted to habit-forming drugs through curiosity. Most of this class frankly admitted having been initiated in the use of narcotics by companions or associates. One of them developed the vice in the penitentiary; another explained how he took drugs to increase his working efficiency. Opiates administered to persons who had undergone surgical operations and to those who had met with painful physical injuries started eight individuals on a career of drug slavery. Thirteen patients became addicted following medication administered to relieve suffering in such diseases as rheumatism, osteo-myelitis, luetic ulcers, pneumonia, gall stones, headaches, dysentery, in the Philippines, glaucoma, tabes (locomotor ataxia), and asthma.

In the entire series three patients only admitted having received their "dope," so-called, from reputable physicians. The great majority of them either purchased their supply from professional venders, who made stated rounds in the down-town district, or at certain drug stores.

TABLE 8  
ADMISSION TO CLEVELAND HOUSE OF CORRECTION—  
WARRENSVILLE

1915	Male	Female	Morphin	Heroin	Morphin and Cocain	Morphin and Heroin	Heroin and Cocain	Opium Smoking
January .....	5	2	3		2		1	1
February .....	2	2	1			1	1	1
March .....	10	2	6	5				1
Total .....	17	6	10	5	2	1	2	3



The above summary, kindly furnished by Doctor H. H. Ward, shows that during January, February and March, 1915, seventeen men and six women were committed by the municipal authorities to the House of Correction on account of the drug habit.

During March, 1915, four male patients, three addicted to the use of morphin and one of heroin, chose to remain in the hospital ward of the county jail and make the fight unassisted. They succeeded. In all four the habit was of recent origin and the dosage small.

TABLE 9  
GRAND TOTAL OF ALL CASES

	Males	Females	Total
City Hospital .....	46	16	62
House of Correction .....	17	6	23
County Jail .....	4		4
Total .....	67	22	89

According to the best information available, 89 drug addicts have been compelled to seek refuge in public institutions in Cleveland as the direct result of the Harrison Law. This is about .01 per cent of the population of the county, a ratio of less than 1-10000.

The number is surprisingly small, and certain local officials have publicly intimated that many professional habitués are still at large in our midst and that narcotics are still readily obtainable. This doubtless is true to some extent, but I am quite sure that fully 75 per cent of persons previously engaged in the illicit traffic in habit-forming drugs are no longer operating, and I further believe that the large majority of "confirmed fiends," so-called, have been apprehended. On the other hand, I have been reliably informed that heroin, 1/12 grain tablets, have been purchased on the streets of Cleveland, since April 1, 1915, at the rate of \$4.50 per hundred. At such a price the profit would amount to about 900 per cent. Such an industry might well be classified as "frenzied finance." Of course, there are many persons in this community afflicted with painful incurable maladies who require a certain amount of narcotics regularly. Such cases, however, are perfectly legitimate and are not subject to the provisions of the Harrison Law. These do not concern us here. Furthermore, it may be stated that when the final inventory is taken

the number of reputable physicians who have illegally prescribed or sold opiates will be found to be extremely few.

The problem of the drug-habitué is, therefore, not a grave one, and shades into insignificance when compared to other medico-sociological subjects which are now attracting public attention.

So far as I have been able to determine, no suicides and no reign of savagery and crime has arisen in consequence of the Harrison Law.

*Treatment:* No special form of therapy was utilized. All were handled by the reduction method to meet the individual's needs, including the usual supportive and eliminative features. After the drug or drugs were withdrawn, dependence was made upon the ordinary hypnotics for a brief period. No fatalities occurred and all but one recovered. The exception was the old lady previously referred to. The period of treatment varied in individuals according to their age, and physical and mental characteristics. Some experienced a bitter struggle; others weathered the storm rather easily. As a rule, the withdrawal symptoms are not so severe in heroin as in morphin habitués. Heroin addiction, in my observation, is a negative pleasure, while morphin and cocain are positive ones.

By the term "recovered" is meant that the individual was off the drug or drugs when discharged from the hospital, and does not by any means infer permanent relief of the habit. In a great many the taking of narcotics is symptomatic of a deep-seated neurosis or psychoneurosis. To contemplate permanently curing such individuals by treatment covering one month or so in a hospital is as inconsistent as it is ridiculous. The chance of a final recovery, however, is better now with the Harrison Law in effect, as the opportunity to obtain opiates will unquestionably become more difficult as time goes on. The great danger will be that some, in times of stress and upset, will resort to other emotional-quieting agencies, such as Jamaica ginger and the like.

At this point I desire to state that full credit is due the interns who supervised and directed the therapy in these trying cases. Their services were of a high order, and the results achieved compare most favorably with those of other institu-



tions that depend upon the Lambert-Towns and other popular cures for morphin and allied habits.

*Psychology:* The psychology of those addicted to this hidden evil is interesting because it invades the realm of morbid psychology. The downward progress of the narcotic habitué, with all the attendant evils, horrors and disgrace, has been a fruitful though unattractive theme for study by social reformers and hospital authorities. To my mind, there is no more pitiful sight than a man addicted to a life of depravity, in whom all that is wholesome and ennobling has vanished, and who has no incentive to fulfill his social obligations or to have awakened within him desires or hopes for anything else but the "dope," which has been the final cause of his downfall.

The drug habitué is a derelict with limited mental capacity, physically deteriorated, inhibition impaired, a useless burden on others, and yet with potentialities for harm and evil-doing still remaining—a black stain on the fair garment of social progress. Many of them show evidence of congenital defects, which may be observed in cranial stigmata, such as misshapen heads, or facial characteristics, inert, stupid faces, projecting ears, with dull, expressionless features and deep-seated, shifty eyes. They are as a class a truly inappreciative people, always full of grievances and invariably incapable of true regret or sorrow for the results of their deeds. Moral standards are especially low in the chronic offender, who oftentimes falls to the level of perversion and beastiality. In institutions generally they are unwelcome guests, as they are continually complaining and never exhibit the slightest respect for rules, discipline or authority.

Irresponsibility, proneness to impulsive acts, lack of initiative, selfishness and anti-social tendencies, perversion of instinct, neglect of obligations, tendencies to lying and thieving, excess of vanity, egoism, restlessness, lack of normal affection, and inability to focus the attention on work or employment for any definite length of time proves their kinship to mental weaklings.

On the other hand, all of them are aware of the harm they are doing themselves, and of the injury the drug exerts upon their health. They would, indeed, like to emancipate themselves from the tyranny of their habit, but the desire is stronger than their wills, and so the struggle is useless. Morphinists, cocaineists and heroinists, etc., are much the same; they are all psycho-

paths, obsessed like the victim of phobias and other abnormal mental twists. The only difference is in the content of the emotion that obsesses them.

One of their chief deficiencies is their intolerance of pain and trouble. It is, therefore, not surprising when they happen to discover some remedy, or agent, which gives them relief and an increase in the sense of well-being, that it becomes their inseparable friend, the comforter of their existence, a deity, to whom incense is offered by the enslaved mind. Finally, the craving becomes all powerful.

It is, therefore, apparent that the real treatment of this distressing condition concerns a diseased personality and begins the moment the drug or drugs have been withdrawn. The patient leaves the hospital greatly improved both in body and mind, to adapt himself to the customs and conventions of the society in which he is to live and of which he will be a part. If he is burdened with traits, tendencies and shortcomings antagonistic to full mental vigor, or is exposed to faulty and unfavorable environments, or has been the victim of a vicious heritage, he will have a tremendous task in adapting himself and withstanding the strain of modern life, no matter how deeply intrenched his resolutions may be.

Finally, I am hoping that the Harrison Anti-narcotic Law will prove the means of preventing these derelicts from obtaining opiates, which they will most assuredly crave for when trouble and depression again befalls them. If this can be accomplished, it is quite likely that the slow reformation of control and re-establishing of the personality, which must accompany any permanent change for the better, may bring about the desired result.

*The Rose Building.*

---

**Lead Poisoning.**—L. R. Sante, St. Louis (*Journal A. M. A.*, May 8, 1915), reports two cases of lead poisoning from cosmetic (Flake White). The relative infrequency with which this is diagnosed leads to the belief that it is too often overlooked, though lead neuritis from this cause has been known for a great many years and Holland stated that it had in 1881 caused almost every form of chronic lead poisoning.



## AN HISTORICAL STATISTICAL REVIEW OF TUBERCULOSIS IN CLEVELAND

By G. E. HARMON, M. D., C. P. H., and MARY CAREY, from the Bureau of Tuberculosis, Division of Health, Department of Public Welfare, and the Department of Hygiene, Western Reserve Medical School, Cleveland.

Interest in the campaign for the eradication and prevention of tuberculosis is constantly increasing, and this movement is drawing forth a greater amount of support than ever before. In any undertaking it is occasionally desirable and useful to take an account of stock and to review the past conditions and factors of a given problem, in order to find out what has been accomplished, what remains to be done, and how we can best apply our enthusiasm and energy to the matter in hand. With this purpose in mind, this brief statistical history of tuberculosis in Cleveland from the time when records are first available to the present day has been prepared, with the hope that it may be, if not of some value, at least of some interest to those engaged in any form of anti-tuberculosis work in Cleveland.

This paper, as its title implies, is devoted to a consideration of the past prevalence of tuberculosis. It is based upon the statistical data which are available relating to tuberculosis in Cleveland. It has also seemed advisable to include some figures upon the crude death rates for the period which is considered, namely, from 1841 to 1914. In many cases the data are incomplete, and statistical methods have been used in compiling them, the use of which at the present day would be indefensible. The figures in this paper, at least for the earlier part of the period, are not accurate, but only approximate, and only the most general conclusions should be drawn from the figures which are here presented. This paper does not pretend to be a critical statistical analysis of tuberculosis in Cleveland. The figures which can be obtained on the subject do not warrant, and are not sufficient for, such an investigation, except for very recent years. An endeavor, however, has been made to present in a general way, for the period which is considered, the available facts concerning tuberculosis.

### Source of Material

The material forming the basis of this paper has been obtained from the records on file at the Health Office. The data

for the period 1841-1873 consists of copies of the sextons' records in the various cemeteries, and so include only such information as was recorded by the sexton for each burial. The data thus obtained are, of course, far from complete. From 1873 to 1908 the information in the Health Office is based upon an unsatisfactory form of death registration, but is probably somewhat more complete than for the preceding period.

From 1908 the figures may be considered to be practically correct, for in this year Ohio passed an efficient registration law, which was approved by the United States Census Bureau, as shown by the admission of Ohio in 1909 to the registration area of the United States. The registration of deaths then came more directly under state control, an arrangement which tends to increase the accuracy of registration.

The populations used have been obtained from the various United States censuses. The populations for intercensal years have been estimated by the arithmetical method. The populations since 1900 have been taken from the published estimates of the United States Census Bureau. These estimates differ from those used by the Health Department; so the rates published at different times by the Health Department do not agree with those given in this paper.

### Compilation and Classification of Deaths

Since no figures had been compiled previous to 1885 from the records of deaths, we have made the necessary compilation for this period for the figures which are here presented. The first permanent Health Bureau of Cleveland was organized about 1883 as a branch of the Police Department, and so from 1885 the figures as compiled by this bureau have been used.

In assembling the figures for this paper, the following classification of the causes of death was used. Deaths recorded as caused by consumption, hemorrhage of the lungs, phthisis, pulmonary tuberculosis, or tuberculosis of the larynx, were placed under the heading *pulmonary tuberculosis*. Deaths recorded as caused by scrofula, hip disease, disease of the spine, white swelling, tuberculosis (organ not specified), tabes mesenterica, tuberculosis of the glands, tuberculous meningitis, tuberculosis of the intestines, tuberculosis of the kidney, psoas abscess, or tuberculosis of the bones, were placed under the heading *tuberculosis of other organs*, and deaths due to these various causes are included



in the tables under *all forms of tuberculosis*. Deaths recorded as caused by lung fever, pneumonia, pleurisy, bronchitis, congestion of the lungs, inflammation of the lungs, asthma, empyema, hydrothorax, lung disease, atelectasis, or emphysema, were placed under *non-tuberculous diseases of the respiratory tract*.

It is hoped that, while this classification may be in some respects quite arbitrary, it may serve to separate in a general way deaths due to tuberculosis from deaths due to other causes, and tuberculous diseases from non-tuberculous diseases of the respiratory tract.

In view of the fact that the diagnosis of tuberculosis and its differentiation from non-tuberculous diseases are somewhat inaccurate even now, it is hardly necessary to state that it must have been much more so in times past. From 1885 to 1896, deaths due to tabes mesenterica, scrofula, or tuberculous meningitis have been omitted from the figures presented in this paper, because it was exceedingly difficult to obtain the necessary data. From 1897 to 1902, no cases of tuberculous meningitis were recorded.

The deaths up to 1885 probably include the deaths of those buried in Cleveland and dying elsewhere. However, it is likely that people dying in Cleveland but buried elsewhere were not included, so that the error due to counting the burial of non-residents who died elsewhere is in a measure a balanced one. This policy illustrates the laxness of statistical practice in former years. After 1885 the burials of non-residents are not included in the total deaths.

As far as possible, *stillbirths* have been excluded from total deaths. The term stillbirth was probably poorly defined in the early years of this review. It would be hard to say just what was meant by a stillbirth in 1841. Even today the term is apparently not very clearly defined in the minds of some physicians. Certificates are still received by the Health Officer on which the cause of death is given as stillbirth, even though the child has lived for a varying length of time. The term stillbirth should be used only in those cases where the child is born dead. If the child lives for any length of time, no matter how short, death is due to some other cause.

Table I gives the population, total deaths, deaths from pulmonary tuberculosis, deaths from all forms of tuberculosis, and deaths from non-tuberculous diseases of the respiratory tract, by years, for the period 1841-1914.

TABLE I

Year	Population	Deaths, exclusive of stillbirths	Deaths from pulmonary tuberculosis	Deaths from all forms of tuberculosis	Deaths from non-tuberculous diseases of the respiratory tract
1841	7167	123	37	38	0
1842	8263	143	21	23	8
1843	9359	200	37	37	7
1844	10456	196	23	23	21
1845	11552	190	25	25	11
1846	12648	257	33	33	18
1847	13744	419	65	65	19
1848	14840	341	58	58	23
1849	15937	659	74	75	17
1850	17034	542	82	88	12
1851	19672	416	57	58	21
1852	22310	683	88	89	20
1853	24949	548	84	87	22
1854	27587	1028	97	100	25
1855	30225	582	77	79	28
1856	32864	921	162	169	67
1857	35502	904	146	152	58
1858	38140	799	133	137	66
1859	40779	817	129	133	53
1860	43417	797	123	125	68
1861	48358	966	135	138	130
1862	53299	856	128	133	77
1863	58240	1230	168	175	113
1864	63181	1640	202	202	116
1865	68123	1384	158	164	84
1866	73064	1390	170	177	96
1867	78005	1407	185	186	90
1868	82946	1540	177	182	74
1869	87887	1486	155	160	92
1870	92829	1644	192	196	60
1871	99560	1716	200	206	83
1872	106292	2121	171	181	98
1873	113023	2163	152	162	85
1874	119755	2038	169	187	160
1875	126486	2972	220	250	224
1876	133218	2903	261	297	181
1877	139950	2641	252	306	126
1878	146682	2528	245	303	124
1879	153414	2838	206	249	229
1880	160146	3205	224	287	240
1881	170266	3857	276	321	325
1882	180387	3731	294	357	342
1883	190508	3563	252	287	324
1884	200629	3920	307	346	349



TABLE I (Continued)

Year	Population	Deaths, ex- clusive of stillbirths	Deaths from pulmonary tuberculosis	Deaths from all forms of tuberculosis	Deaths from non-tuberculous diseases of the respiratory tract
1885	210748	3574	368	383	348
1886	220869	3525	334	352	378
1887	230990	4139	378	392	440
1888	241111	4414	355	367	529
1889	251231	4414	368	389	473
1890	261353	5058	423	428	659
1891	273391	5204	367	372	819
1892	285436	5227	422	423	772
1893	297477	5261	411	413	757
1894	309519	5663	402	403	939
1895	321560	5167	454	457	686
1896	333602	4859	443	448	605
1897	345643	5007	445	450	647
1898	357685	5040	449	452	727
1899	369726	5556	490	494	756
1900	383034	6104	495	498	845
1901	398220	5834	438	438	792
1902	413406	6134	452	489	946
1903	429878	6799	561	589	911
1904	445064	6467	617	648	929
1905	476050	6424	564	608	885
1906	494079	7353	589	647	1124
1907	509266	7678	622	672	1128
1908	524453	7177	643	699	944
1909	539640	7032	597	672	1004
1910	564066	8034	684	812	949
1911	580398	7967	716	831	891
1912	596970	8149	665	789	995
1913	622699	8842	693	808	1061
1914	639431	8267	719	849	922

TABLE II

Table II gives the crude death rate per 1,000 population, the death rate for pulmonary tuberculosis per 100,000 population, the death rate for all forms of tuberculosis per 100,000 population, and the death rate for non-tuberculous diseases of the respiratory tract per 100,000 population, by five-year periods, except the first period, which is for four years. The average rate for each period is given in each case.

TABLE II

Period	Crude death rate per 1,000 population	Death rate from pulmonary tuberculosis per 100,000 population	Death rate from all forms of tuberculosis per 100,000 population	Death rate from non-tuberculous diseases of the respiratory tract per 100,000 population
1841-44	18.7	347	356	93.4
1845-49	26.4	362	363	127.9
1850-54	28.6	372	386	89.4
1855-59	22.8	366	379	152.6
1860-64	20.3	283	289	189.4
1865-69	18.6	219	225	112.7
1870-74	18.2	169	178	90.1
1875-79	20.0	171	203	130.5
1880-84	20.3	150	178	175.2
1885-89	17.4	157	164	187.6
1890-94	18.5	143	144	278.6
1895-99	14.9	132	134	197.4
1900-04	15.1	124	128	214.0
1905-09	14.0	118	129	187.4
1910-14	13.7	116	136	161.0

It will be observed that the crude death rates are somewhat irregular, but show a decided tendency to decrease from the beginning to the end of the period. The rates for pulmonary tuberculosis are more regular, and show a decided decrease. The rates for all forms of tuberculosis in a general way follow those for pulmonary tuberculosis. The rates for non-tuberculous diseases of the respiratory tract are quite irregular, and it is difficult to say whether they have increased or decreased during the period. Although it would appear that there has been a tendency for these rates to increase, still it is probably safe to say, if the actual facts could be known, that there has really been but very little change in the rates for this class of diseases.

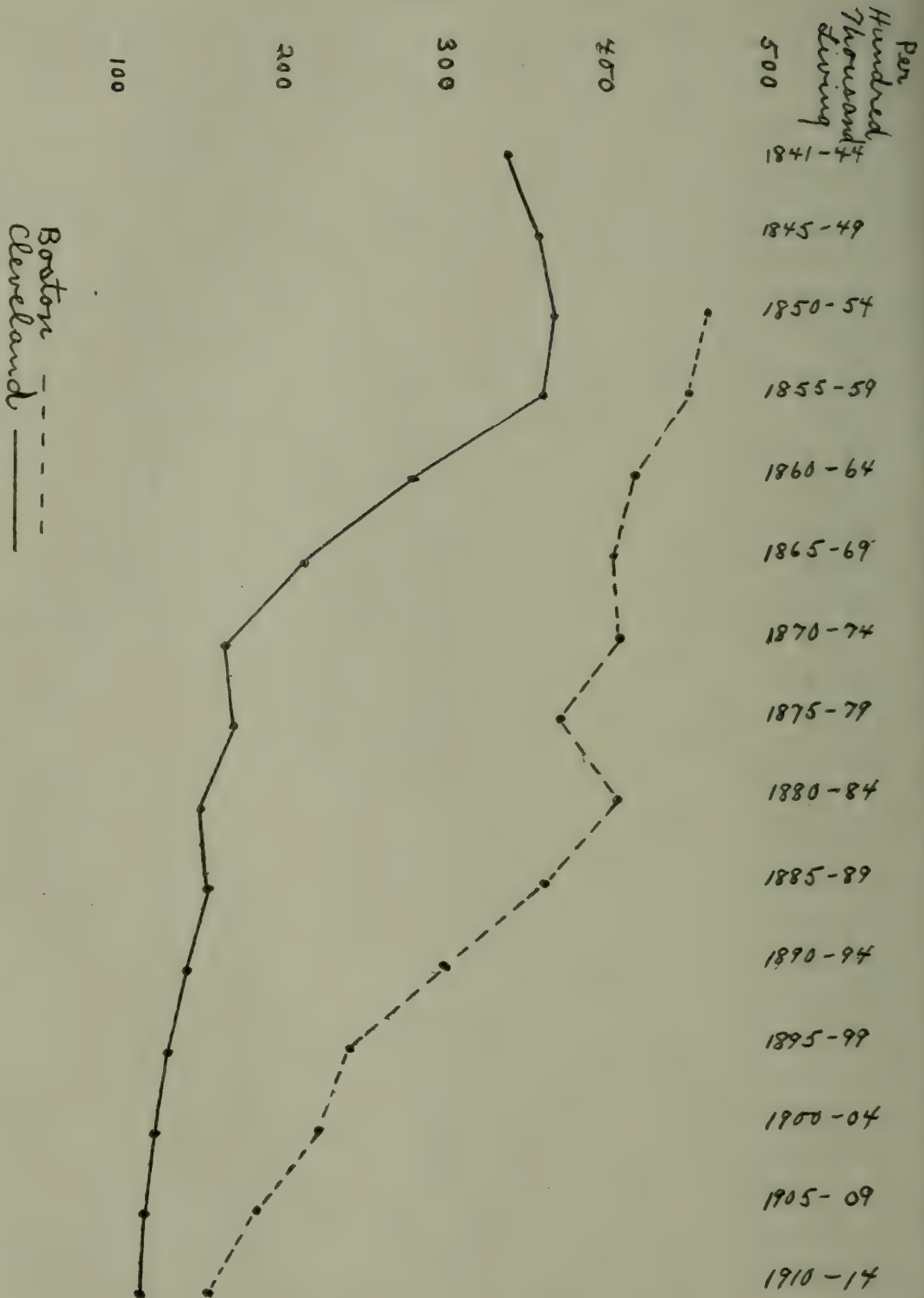
The crude death rates and the rates for pulmonary tuberculosis will now be given more particular attention. It is fair to say that both the crude death rates and the rates for pulmonary tuberculosis are too low for the years at least before 1895. This is due to the fact that during the period 1841-1895 the registration of deaths was incomplete, and as the recorded deaths are below the true number of deaths, the rates based upon these deaths must be too low. It is impossible to tell how much too low these rates are. It is also probably true that the error is greater for the earlier part of the period, and grows less as we approach the year 1895. Except for the periods 1845-1849 and 1850-1854, there is no marked drop in the death rate until 1895-1899. The two earlier periods have a much higher rate than any other period—in fact, in comparison with the other periods, ab-



normally high rates. It is hard to explain this result. The cholera epidemics of 1848 and 1854 may have had a slight influence in raising the rates for these periods. This, however, is far from a satisfactory explanation. There is, however, a marked drop in the general death rate in the period 1895-1899, and as the rates previous to this period are too low, this drop is probably really greater than it appears. It is significant that this drop in the death rate is coincident with the period of the organization of health work and the beginning of the popularization of knowledge concerning health matters. It seems fair to assume that organized health work and health education are more or less responsible for the lower rates. Evidence is thus given that health work and health education are really effective in promoting better public health. If people desire better health, it would seem to be a self-evident fact that the agencies of a city which can and do accomplish the desired result should be supported in their endeavor financially and in every other possible way. Most people desire to live as long as possible, while they live to be as healthy as possible, and to live in a healthy community. The Cleveland Health Department, in order that it may do its work more effectively and efficiently, needs the support and co-operation of every physician, every public officer, and every citizen.

The death rates for pulmonary tuberculosis show a more constant, steady decline than the crude death rates. The decrease before 1880 is greater than the decrease since that date. This dividing point is taken because the tubercle bacillus was discovered in 1882, and this date marks the time when it was first possible in an intelligent manner to attempt to prevent this disease. It is generally true, where accurate statistics have been kept, that the death rate for pulmonary tuberculosis has decreased more after 1880 than before this date. This phenomenon is probably due to the improvement of living conditions and active measures directed toward prevention of tuberculosis. The following chart will perhaps help to make these points clear:

## CHART



The chart presents, in the form of curves, the average death rate for pulmonary tuberculosis for the periods indicated for the cities of Boston and Cleveland. Data for Boston were obtained from the Annual Reports of the Boston Health Department. Boston is the older and more congested city. Under these conditions it might be expected that Boston would have the higher



rate from pulmonary tuberculosis. The chart shows this to be the case. Throughout the entire period and even at the present time the rates for Boston are higher than those for Cleveland. The greater prevalence of tuberculosis in Boston is thus best explained by the presence of unfavorable conditions, such as congestion, rather than to the lack of effective anti-tuberculosis work, indeed, the curve from 1880 shows that a great deal has been and is being accomplished in Boston toward preventing tuberculosis.

In comparing the curve for Boston with that for Cleveland, it will be noticed that the marked decrease in the Boston curve occurs after 1880, while in the case of the Cleveland curve it occurs before this date. This phenomenon calls for some consideration. Table III will help to throw some light on this condition.

TABLE III

Period	Deaths from pulmon- ary tuberculosis.	Deaths from non- tuberculous diseases of the respiratory tract.
	Per cent of total deaths	Per cent of total deaths
1841-44	17.8	5.4
1845-49	13.7	4.7
1850-54	12.7	3.1
1855-59	16.1	6.7
1860-64	13.8	9.2
1865-69	11.7	6.0
1870-74	9.1	5.0
1875-79	8.6	6.4
1880-84	7.4	8.7
1885-89	9.0	10.8
1890-94	7.6	14.9
1895-99	9.5	14.3
1900-04	8.2	14.1
1905-09	8.4	14.3
1910-14	8.4	11.7

This table gives the percentage which the deaths from pulmonary tuberculosis and deaths from non-tuberculous diseases of the respiratory tract are of the total deaths. Although the percentage method of dealing with causes of deaths has very distinct limitations, still its use will probably give us some valuable indications in the given instance. It will be seen for the early part of the period, and it is for this period that we are trying to explain the apparently abnormal Cleveland curve, that the percentages for pulmonary tuberculosis are very high, while for non-tuberculous diseases of the respiratory tract they are quite low. It seems hardly credible that the deaths from non-tuber-

culous diseases could have been so low as the percentages indicate and as the actual number of deaths in Table I shows. In that case, what has happened? Since the percentages of deaths from pulmonary tuberculosis are so high, it would seem as if a good many deaths have been included under tuberculosis which do not belong there. In other words, there are many deaths included under this heading which probably were due to non-tuberculous diseases of the respiratory tract. Diseases of the respiratory tract would not be so very readily confused with diseases in other groups, such as those of the digestive tract, for instance; so the great error would come in placing a disease in one or the other of the two groups now being considered, pulmonary tuberculosis or non-tuberculous diseases of the respiratory tract. It might be argued that disease due to pulmonary tuberculosis had been placed in the group of non-tuberculous diseases of the respiratory tract, thus in a measure balancing the transference of deaths from this group to that of pulmonary tuberculosis. A comparison of the percentages clearly indicates that this error is not of much importance, and the greater error has been in transferring deaths from non-tuberculous respiratory diseases to pulmonary tuberculosis. Therefore, the rates for pulmonary tuberculosis should be much lower previous to 1870. After this correction has been made, the curve on the chart will probably not run much above the 300 point at any time. But even then the disease in the curve previous to 1880 will be greater than that occurring after this date. This variation from the experience of other places is very difficult to explain from the use of the data which are obtainable, and so no other explanation will be attempted.

After this correction in the curve has been made for the transference of deaths from the group of non-tuberculous diseases of the respiratory tract to deaths due to pulmonary tuberculosis, it will be necessary to make still another correction. Owing to imperfect death registration, the entire curve previous to 1895 should be in a general way higher. The necessity for this correction has been discussed in connection with the consideration of the crude death rates. So the actual decrease in the curve since 1895 is greater than the chart shows. Whatever may have been the cause of the decrease in the early part of the period, it is safe to say that the decrease in the tuberculosis



rates for recent years has been due to active and aggressive anti-tuberculosis measures. As the rates approach the zero point, to keep them on the downward move will require progressively greater and greater efforts and persistency in our anti-tuberculosis campaign. It was much easier to eliminate the first 100 points of the death rate from pulmonary tuberculosis than it will be to eliminate the last 50. This constitutes at least one explanation of why the rates are not now decreasing so rapidly as formerly. The problem is progressively more difficult, and has not as yet received a proportionally increased amount of support, which is necessary for success. To measure fully the value of anti-tuberculosis results, it must be constantly borne in mind that without such activities, owing to the increasing congestion of Cleveland and owing to all the factors associated with congestion which favor tuberculosis, *the rates would be increasing instead of decreasing.*

### Conclusions

1. The vital statistics of Cleveland have in the past been very incomplete. The aim now should be to make up for this deficiency by not only making the vital statistics of Cleveland better, but the best possible. The help and co-operation of all physicians is needed to accomplish this desired result.

2. The crude death rates have been steadily decreasing from 1841 to 1914.

3. The death rates for pulmonary tuberculosis have also decreased from 1841 to 1914.

4. General health work and anti-tuberculosis activities have produced results, are doing so now, and will continue to do so, if they are properly supported. To a certain extent the greater the support, the greater the results will be.

5. A more detailed study of the data collected during recent years relating to tuberculosis would seem to be called for.

---

We desire to thank Doctor R. H. Bishop, Chief of the Bureau of Tuberculosis, for the assistance which made this paper possible, and Doctor C. E. Ford, Commissioner of Health, for the use of the official records.

## CASE REPORTS FROM THE MEDICAL DEPARTMENT OF THE DISPENSARY OF LAKE-SIDE HOSPITAL

By V. C. ROWLAND, M. D., Cleveland

It was thought that a few concise case reports at intervals from the more interesting or unusual cases passing through the Dispensary might be of interest to readers of the *Journal*. The following recent cases seem worthy of a brief report:

### Case I. *Bulbar Palsy.*

W. K., male, aged 53. Always well. Six months ago, not following any acute infection, paralytic symptoms very gradually became noticeable. The difficulty in swallowing apparently was first. Liquids returned through the nose, and solid food constantly worked forward in the mouth on attempts at swallowing. Voice changes then became annoying, and on examination he had a bilateral paralysis of the larynx, complete paralysis of the palate, atrophy and moderate loss of motion in the tongue. There was imperfect apposition of the posterior part of the tongue to the paralyzed palate, so that on attempting to say "key" he would say "he." Dentals could be fairly well produced. He was unable to whistle, although there was no facial paralysis. The striking feature was the loss of reflex in the pharynx. With two tongue depressors one was able to step down over the root of the tongue and epiglottis, pulling the tongue forward, without exciting any reflex. The cerebro spinal fluid contained only three cells to the cmm. There is also some atrophy of the trapezius muscle, indicating an involvement of the nuclei of origin of the spinal accessory or 11th cranial nerve. The fibres supplying the trapezius have their origin in the spinal portion of the spinal accessory nerve, which arises from multiple segments and extends as low as the 6th cervical. This suggests an extension of the degenerative process toward the cord such as occurs in the bulbar forms of progressive muscular atrophy. The main process, however, in the bulbar nuclei and the age of the patient, and the associated arteriosclerosis, make it more probable that the lesion is the secondary softening of vascular origin.



Case II. *Interstitial Nephritis at 30 years. Blood Pressure 320. Hemiplegia.*

Woman, married, father died of heart disease, one sister of "apoplexy." Patient had typhoid at 18. Husband had tuberculosis. She had been ailing in an indefinite manner for a year or more. While standing in the dispensary, she reeled and slid down in a chair. She was placed on a cot in a very restless and excited condition, when it was noticed that she had a left facial paralysis, paralysis of left arm and nearly complete in the left leg. She did not lose consciousness. Blood pressure taken at the time was 320, and promptly reduced to 240 with nitroglycerin drops while the cuff was on the arm. The excessive pressure of 320 was probably a fleeting vascular spasm, as the pressure remained at 240 in spite of all treatment for the following two weeks on the ward. Confronted with a patient just at the onset of hemiplegia, with such an enormous pressure as 320, and the possibility of hemorrhage extending at the time, and in the absence of signs of intracranial pressure, the indication for a prompt reduction, at least momentarily as with nitroglycerin, seemed clear. The restlessness quieted down quite promptly, and was further controlled by a small dose of morphia. The hemiplegia largely cleared up in the following three weeks that she remained on the ward. Four conditions would have to be considered in these cases of vascular accident—hemorrhage, thrombosis, embolism and spasm of the cerebral vessels. The absence of valvular endocarditis and the sudden onset, with excessive blood pressure, spoke against embolism and for hemorrhage. At the onset, with no suggestion as to whether the paralysis would be transient or permanent, of course the possibility of vascular spasm must be considered. In this case vasodilators would be indicated. In the case of hemorrhage, the usual objection to lowering an excessive blood pressure, namely, that it is compensatory and necessary to maintain an adequate cerebral circulation, did not apply because there were no signs of increased intracranial pressure.

Case III. *Myasthenia Gravis.*

Boy, 16, quite anemic and rather under-developed, but always well. About ten months ago began to have drooping of the eyelids, so that he carried his head back in order to see. On

eating, the jaw, after a few bites, became fatigued and dropped down so that he would lift it up in place with his hand. After a few minutes of rest he could take a few bites again. The hands were also involved, so that in writing, words became quite illegible after three or four lines had been written. The abdominal muscles were also involved. The reflexes were all normal except the so-called myasthenic reflex of rapid fatigueability of the muscles, either by voluntary effort or by faradic stimulation. This, of course, differentiated the condition from any organic disease of the central nervous system. In fact, no other condition shows this extreme lack of reserve muscular power, so that the diagnosis is relatively easy. The disease, however, is excessively rare. It usually occurs in early adult life. The natural course of the disease varies widely. Remissions are frequent. The prognosis is in general bad. Many cases will die within two or three years, most commonly of asphyxia. Recovery may occur. The synonym, asthenic bulbular palsy, is less appropriate, since there is no lesion of the bulb. Changes in the muscles have been described, but the exact pathology and etiology are unknown.

*Case IV. Chronic Localized Oedema Following Repeated Attacks of Erysipelas:*

M. B., male, 26 years, American. Always lived in the North, never visited tropical districts. No history of hereditary oedema. Past history negative, except for the following:

At 14 years. Had erysipelas on left hand, with pain, swelling and fever. Lasted one week and cleared up completely.

At 15 years. Had the same condition in the left leg, lasting about two weeks and clearing up completely.

At 17 years. Had a quite similar attack in the right leg for two weeks, which cleared up completely.

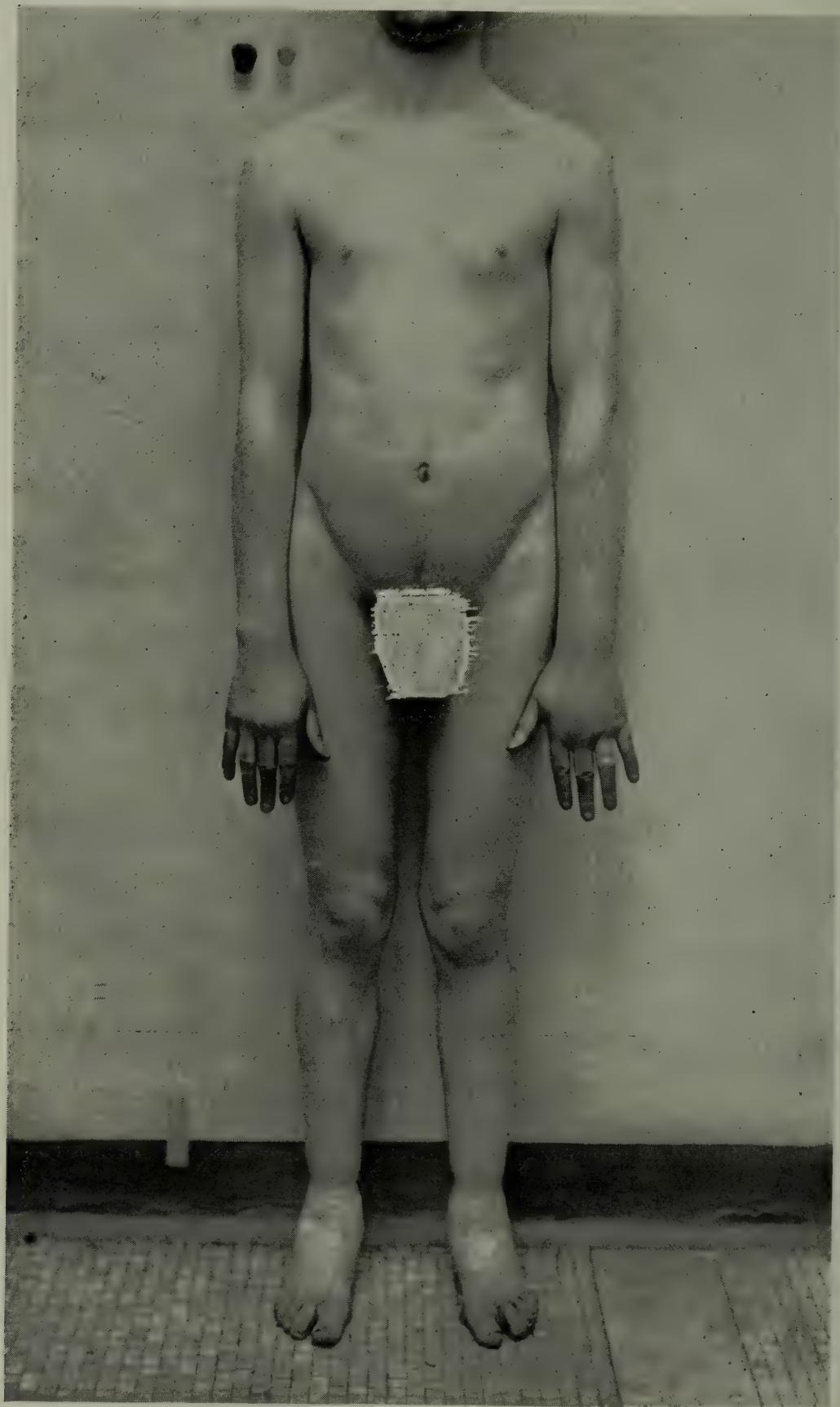
At 19 years, he had a second attack in the left leg, of great severity, lasting one month, with delirium for one week. The oedema of this never cleared up. Later the same oedema appeared in the arm and leg previously affected, and conforming quite closely to the area that had been involved.

At 25, oedema of the right eyelids and conjunctiva appeared, although the patient says there never had been any acute inflammation there.





Chronic localized oedema following repeated attacks of erysipelas—right eye.



Chronic localized oedema following repeated attacks of erysipelas—both feet, left hand and right eye.



The oedema, except for the localized distribution, was suggestive of acute nephritis. The urine, however, was normal, and there was no cardiac hypertrophy or elevation of blood pressure. General physical examination was negative. The blood showed a marked eosinophilia, 46 per cent on one occasion and 28 per cent about two weeks later. No adequate explanation for this was arrived at. An indefinite intestinal disturbance a couple of weeks before may have been trichinosis, although no history of eating raw pork in any form was obtainable. No ova of intestinal parasites were found in the stools. The oedema of one eye, without previous erysipelalous inflammation suggests trichinosis as a possible factor in the production of the oedema. In the arms and legs, however, the swelling corresponded quite accurately to the areas previously affected by erysipelas, and a mild inflammation of the eye may not be remembered by the patient. In fact, there are exacerbations of the swelling, with some redness and discomfort in the eye on exposure to wind and dust, and in the extremities with muscular work. The condition is most probably an obstructive lymph angitis due to repeated attacks of erysipelas.

Sir Jonathan Hutchinson, in his Archives of Surgery, described these cases on several occasions. He wrote, "Some degree of permanent swelling is not uncommon." An illustration of a woman with marked oedema of both eyes, due to erysipelas, is reproduced.

Case V. *Double Facial Paralysis of Syphilitic Origin.*

M. S., male, aged 33, Roumanian. Came to the dispensary with a unilateral facial paralysis and complaining of severe pain in the region of the mastoid process on the same side, extending forward on the face. There was no history of naso-pharyngitis or of ear discharge, nor of alcoholism, syphilis or unusual exposure. Examination of the ear was negative. Within a week a similar paralysis had developed on the other side, so that the whole face was smooth and immobile. There was complete inability to wrinkle the forehead, close the eyes, or purse the lips. He had difficulty in eating, because liquids drained from the mouth and solids collected between the cheeks and teeth. He also complained of severe occipital headache, especially between the two mastoid processes and extending to the sides of the face. There was absolutely no involvement of other cranial nerves. The general physical examination was negative, except that the blood

pressure was moderately elevated—150 systolic. The temperature was 99. Further neurological examination was negative, except that there was loss of taste in the anterior portion of the tongue. This, of course, is significant in localizing the lesion central to the branching of the chorda tympani from the 7th nerve in the facial canal. An extensive basilar meningitis would almost certainly involve more than the two facial nerves. The extreme occipital pain suggests inflammation in the dura, which by swelling must have compressed the facial nerve trunks. The spinal fluid showed 65 cells to the cubic millimeter, and the Wassermann reaction was positive. Antisyphilitic treatment fairly promptly controlled the headache, but the paralysis has remained unchanged, which may be explained by the mechanical injury of pressure on the nerve. The case illustrates the value of testing the taste in the anterior part of the tongue to more accurately localize the lesion in peripheral facial paralysis. Other causes of facial diplegia are lesions of the pons, double ear disease and diphtheritic paralysis.

Case VI. *Unilateral Facial Paralysis in Secondary Syphilis.*

Young man, colored, presented himself at the dispensary with a unilateral facial paralysis. He stated that he had always been in the best of health until about two months before, when he had a loss of power in his right arm and to some extent in the right leg, so that he "dragged" his foot. He had taken medicine obtained from a doctor for about a week for this, when it cleared up entirely. He did not know what the medicine was nor what he was treated for. He says he was then well until the facial paralysis appeared. Presumably it was a case of syphilis of some duration, but on examination he had a full-blown secondary eruption and a phimosis concealing some lesion. Just when the primary infection occurred could not be determined, but it seems highly probable that the transient hemiplegia occurred very early in the secondary stage, before the secondary eruption. This is very rare. Secondary syphilis, however, has long been recognized as one of the less common causes of facial paralysis. In this connection it might be stated that marked pleocytosis of the cerebro-spinal fluid—as much as 200 cells to the cmm.—has been observed in secondary syphilis without neurological symptoms. Obviously, however, the latter are always potentially present with so marked an invasion of the central nervous system. The arteries are first attacked, and apparently the corresponding nervous tissue is usually disturbed somewhat later.

*Osborne Bldg.*



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902.

Capital Stock, \$6,000

---

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH F. STONE  
2318 PROSPECT AVENUE

## ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.  
ROGER G. PERKINS, M. D.

JOHN PHILLIPS, M. B.  
T. WINGATE TODD, F. R. C. S.

## COLLABORATORS

C. E. FORD, M. D.  
H. E. HANDERSON, M. D.  
S. W. KELLY, M. D.  
J. J. R. MACLEOD, M. D.

DAVID MARINE, M. D.  
V. C. ROWLAND, M. D.  
H. L. SANFORD, M. D.  
TORALD SOLLMANN, M. D.

G. N. STEWART, M. D.

---

## EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.  
*Vice-President*, C. E. BRIGGS, M. D.

*Secretary*, C. A. HAMANN, M. D.  
*Treasurer*, H. G. SHERMAN, M. D.

---

## BOARD OF DIRECTORS

C. E. BRIGGS, M. D.  
F. E. BUNTS, M. D.  
G. W. CRILE, M. D.

C. A. HAMANN, M. D.  
C. F. HOOVER, M. D.  
S. H. LARGE, M. D.  
J. B. MCGEE, M. D.

J. P. SAWYER, M. D.  
H. G. SHERMAN, M. D.  
W. H. WEIR, M. D.

---

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

---

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

---

## EDITORIAL

### Myeloma

Nowhere in pathology is it more difficult to draw a sharp line of differentiation than between tumors and hyperplasias. It is true that there are many distinct and differentiable examples of each and that a conception of types may be easily acquired. Tumors that are distinctly blastomatous are familiar to all medical men, but difficulties arise constantly in studies of the pathology

of the thyroid, breast, prostate and other organs. Of recent years the study of the blood and hematopoietic system has led to similar difficulties; one needs only to refer to the differences of opinion as to whether the leukemias are simply hyperplasias of parts of the hematopoietic system or whether they are really tumors of this complicated apparatus, in order to bring the situation home to both clinician and laboratory worker. Nor is the problem made less difficult by the newer conceptions of "system diseases" and of "constitutions." The relation of hyperplasias and tumors of the hematopoietic system is discussed admirably by Mieremet (Ueber "Systemerkrankung" und Tumorbildung der blutbereitenden Organe, *Virchow's Archiv*, 1915, CCXIX, 1), who views the problem philosophically, particularly in reference, however, to the position of the so-called "Myeloma" among these diseases. The review of the reported cases of myeloma shows how the picture may vary from one in which there are only a few nodular growths to those in which there is not only a diffuse involvement of the bone marrow but also of the spleen, lymph nodes, liver and even other viscera. The varying cell picture is emphasized and a critical examination of the cases which have been reported as plasma cell myelomas leads the writer to the conclusion that practically all these cases have no right to a separate classification. Variations in the invasiveness of the process, variations in the blood picture, the fact that sometimes Bence-Jones albumosuria is present and sometimes absent, the fact that sometimes the disease runs its course rapidly, again that it is of long duration, and that the clinical course is not to be correlated with pathological extent or rapidity of growth, all lead the writer to this broad conception of the nature of this true system disease. The resemblance of the bone marrow picture to that of myelogenous leukemia in some cases, and in other cases, because of the multiple mitoses, lack of differentiation of cells, vascular arrangement and invasion, to the pathological concept of sarcoma lead the writer to draw a parallel between myelogenous leukemia, pseudoleukemia or aleukemia and myeloma on one hand and lymphatic leukemia, lymphoma and in some cases lympho-sarcoma on the other hand. This must not be interpreted as making a parallel between myeloma and lympho-sarcoma, for whilst many cases of myeloma are regarded as hyperplasias, few cases of lympho-sarcoma can be looked upon in this way. With these points in view it is easy to see



that innumerable multiplications of terms, groups and subgroups might result if attempts were made strictly to classify each case. It is, therefore, with sympathy for all attempts at simplification of pathological processes that we commend to attention the suggestion of this writer that these conditions be referred to simply as "lymphadenoses" or "myeloses" and that special characters be indicated by qualifying terms indicating type of cell, character of the blood, aggressiveness, color, etc. Critical scientific examinations, supported by broad philosophical argument, are always convincing; when tending toward simplicity of classification in pathology or the clinic, they deserve the most serious consideration; combined with judgment and mental balance, they will put medicine in its place among the sciences. H. T. K.

---

**Epidemic Tonsillitis.**—The close relationship of epidemic sore throat to an infected milk supply has only been comparatively recently noticed in this country, says H. A. Bray, Ray Brook, N. Y. (*Journal A. M. A.*, April 3, 1915), who gives an account of an epidemic occurring at the New York State Hospital for Incipient Tuberculosis at that place. It was traced with strong presumption of correctness to a milker at one of the farms from which the milk supply of the institution was obtained. The milk was immediately pasteurized, which embarrassed somewhat the bacteriologic study, the results of which are given in a chart. The organisms isolated were described under two heads: in Group A they are characterized by their hemolytic action, their ability to ferment salicin, their negative reaction for raffinose, mannite and inulin, and their insolubility in bile, agreeing in this with the pyogenes type of streptococcus. That this infecting organism was the *Streptococcus pyogenes* was confirmed by the pathogenicity for rabbits of the members of this group. The other organism, classed as Group B, showed varying characters that would be exhibited by the streptococci normally present in the upper respiratory tract. The frequency of a throat inflammation in pulmonary tuberculosis embarrasses the diagnosis of a mild intercurrent tonsillitis in these cases. The epidemic was, contrary to some of those elsewhere observed, of a mild character. The constitutional symptoms were uniformly not severe, though present with local disorder in 71 per cent. The tonsils were enlarged, the mucosa swollen and injected, and a discrete exudate appeared in 62 per cent. The pillars were involved in 91 per cent, the pharynx in 93 per cent and the uvula in 73 per cent. Varying degrees of glandular enlargement at the angle of the jaw existed. In some cases there was severe vomiting. Except in a few cases the temperature did not exceed 102 F. The distribution of the epidemic did not appear to be influenced by the stage of the tuberculosis. Brief summaries of six cases in which the lung disease seemed to be aggravated are given. There was no mortality and few resulting complications. But the apparent predisposition of the pleura was noted. The cases would seem to support the theory that throat inflammations are to be avoided in pulmonary phthisis.

## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. McGEE, M. D., Cleveland

**Chronic Nephritis:** Austin W. Hollis, in the *New York Medical Journal* for April 10, reviews the treatment of chronic nephritis. The escape of albumin from the blood into the urine seems to offer many difficulties in experimental explanation, but it hardly seems necessary to accept the theory of Martin Fischer, that the cause of the albuminuria is an acidosis of the kidney tissue which destroys a colloidal cement between the cells. An intelligent treatment of nephritis means complete knowledge of its clinical varieties. In one group we find the most hopeful class of cases to deal with: Cases with marked hypertension and normal urine except for faint traces of albumin and a few hyaline or granular casts. Are we able to cure a patient around middle age with practically no symptoms, but with a blood pressure of over 200, and a heart already considerably enlarged, with a greatly accentuated aortic sound? He believes that in a fair percentage of these cases the blood pressure can be reduced and the general health and physical signs made to approach the normal, but the regime and mode of life have to be strict and exacting, therefore, the majority of such cases are only halted in a steadily progressive course. Diet, hygiene and drugs are all necessary in the treatment. Diet is abused as much by the physician as by the patient. The best scheme is at first to forbid all meat, eggs, cheese, coffee, tea and alcohol, and order a diet of milk, vegetables, bread, cereals and fruit, with a moderate amount of butter, oils and sugar. A minimum amount of protein is essential and a fair though not excessive amount of water, but great insistence should be placed on the freshness of all food and the avoidance of excesses in amount and irregularity in eating. Moderate outdoor exercise, a daily warm bath with friction to the skin, and the avoidance of excessive work, worry and fatigue are of prime importance. The vasodilators, depressors of arterial tension, such as nitrites, aconite, chloral, should not be employed regularly or for long periods of time; occasionally they are of symptomatic benefit, but have no curative action. Sodium bicarbonate, grs. 20, calcium glycerophosphate, grs. 5, sodium phenolsulphate, grs. 5, is an alkaline combination of great benefit to the stomach if taken in a cup of hot water fifteen minutes before meals. Hexamethylenamine, grs. 7½, and sodium sulphooleate, and ichthoform, grs. 5, after meals, have an effect on the gastrointestinal canal, and may destroy certain bacilli of the colon group circulating in the blood and passing to the kidney. A moderate saline cathartic, such as Epsom or Rochelle salt, is a good thing to take on rising. An enema before retiring, to empty the colon and prevent toxic absorption during the night, is a highly beneficial procedure. In the terminal stages of chronic nephritis, evidenced by apoplexy or cardiac and renal insufficiency, and in the plethoric cases, with marked hypertension, venesection with removal of from 250 to 500 cc. or even more of blood is of great benefit and in certain of these cases periodical blood-letting is highly advisable. The estimation of the chlorides and the theory of the French school led to a period of salt-free diet, this fascinating theory being that the serum exuded into the tissues, had become hypertonic from chloride retention, and if the circulating blood became hypotonic from salt starvation, it would attract the serum from the tissues and produce marked diuresis. There can be no question that diuresis very often follows salt starvation, but in these cases changes in diet, rest in bed, diuretics and cardiac stimulants are instituted at the same time. He has seen cardiorenal dropsy continue for months unrelieved by any kind of diuretic or heart stimulant, then having abandoned hope, and adopted morphin to relieve the great distress of the patient, have seen the dropsy wholly disappear. As a matter of fact, the kidneys have periods of inaction, and nothing seems to stimulate them, while at other times they can readily be acted on by various remedies.



**Diathesis:** The *Medical Record* for April 17th treats editorially of the exudative diathesis. It is now about ten years since Czerny outlined sharply the condition which he called the exudative diathesis, and during this time it has grown to have a considerable place in pediatric literature. From the first it was considered to be evidence of disturbed metabolism, but the results of investigations have been conflicting, and the exact nature of the disturbance and its cause have remained unsolved problems. Niemann has carried out very complete metabolism studies upon three children suffering with this condition, and has drawn therefrom certain interesting conclusions. He selected nursing infants in whom the exzematous manifestations were not such as to lead by their irritability to increase in muscular activity. In all of his cases he was able to demonstrate an increase in the production of heat and of carbon dioxid over the normal, and he considers such increase as characteristic of the condition. The children naturally fall into two groups, one obviously thin and undernourished, the other apparently fat, but of the "pasty" type. The weight curves were subject to rather marked and rapidly changing variation, which were much more noticeable in the "pasty" type, and Niemann advances the theory, which is supported by his evidence, that the fat children were fat in a different way from normally fat babies. In these patients the increased weight was due almost wholly to the retention of large quantities of water. There was no disturbance in the absorptive power of the intestines, and a certain number of the patients developed symptoms while still at the breast. In applying these findings to treatment, Niemann was led to avoid the addition of carbohydrates to the food, since under such conditions the storing of water is rendered easy. Also, the feeding of increased amounts of protein was not thought advisable in view of the specific dynamic action of protein in increasing a metabolism already abnormally high. He therefore treated his patients by increasing the fat content of the food, not by the addition of cream, for that would increase also the sugar and the carbohydrates, but by the use of washed butter. His results were very striking. Within a few days from the beginning of his butter feeding, the skin manifestations began to clear up, and in a short period of time the patients were apparently well. The "liability" of their metabolism persisted for various lengths of time, but he was able to control it by this method, and regularly obtained satisfactory results.

---

**Dosage.** The *Therapeutic Gazette* for April calls attention in its editorial columns to dosage and effectiveness. No one can practice medicine for more than a brief period without becoming convinced that quite as much skill is required on the part of the practitioner in determining the dose which is needed of a given remedy as in deciding upon the remedy itself. It repeatedly happens that one physician fails to produce the desired results, while another physician to whom the patient goes in despair, immediately gets good effects from the same remedy, for no other reason than that he has been more skilful in determining the amount which should be administered, and the frequency of the administration. In teaching medical students the dose of remedies it is impossible to do more than inform them of the approximate doses. Only experience can tell the individual physician the amount which will be needed in a given case, and often even those with the largest experience have to try several doses before they find the one which produces the effects they desire. These facts have much to do with the contradictory ideas which exist in different men's minds as to the efficiency of a given remedy. One physician states that he frequently employs a certain drug, and has come to rely upon it as a "sheet anchor" when conditions are desperate; another physician replies that he has tried it, and that his results have been as lacking in success as the other's have been full of good. This difference of opinion does not rest upon any lack of power

of observation on the part of either man, but upon the judgment of each as to the amount of the remedy to be used. If there were more accurate statements made as to the doses employed when remedies are suggested by one practitioner to another, better results would accrue. It is also probably the case that certain physicians consistently administer remedies in doses which are too large or which speedily become so, because the drug is one which is persistent in its effects, so that after a few doses the patient is not only under the influence of the remedy administered on that particular day, but also under the influence of doses which have been given on previous days. Then there is the physician who habitually uses too small doses, and it may be that in a large number of cases he is a better practitioner than he who gives the large ones. Sometimes, rapidly-acting, but fugacious remedies, are given at too long intervals, or doses of slow-acting, persistent remedies are given too close together; and, again, sufficient judgment is not exercised in determining exactly what is to be accomplished in a given patient at a given time. Thus, in giving digitalis, it is often wise to give one or two rather large doses, and almost always unwise to continue them, the proper method being to correct urgent symptoms by large doses, and then maintain the good effect by smaller ones, thereby preventing an excessive digitalis effect, which may be more disagreeable or harmful to the patient than the condition for which the remedy is administered.

**Dyspepsia.** Beverley Robinson, in the March number of *American Medicine*, treats of dyspepsia, stating that despite all the advances made in latter years, we cannot always tell precisely what the cause of the trouble is. Especially is this true of the functional or nervous disturbances. When the anatomical changes in the stomach are very doubtful, if indeed any at all exist, the symptoms may be very obstinate, and wise empiricism with repeated trials of various drugs, or combinations of them, will alone in the end bring about relief or cure. We may form, as we believe, an accurate diagnosis of hyperchlorhydria, hypochlorhydria, achylia gastrica, spasm of the cardia and pylorus, or even of dilatation, and impaired motility, and yet the direct contrary of what seems to be rational treatment will ultimately prove the most successful. So it is the old views and old-time remedies come out ahead frequently, when the reports from the laboratory are practically delusive or incorrect. The therapeutic test, based on a carefully taken anamnesis, a thorough physical examination, and a generous use of common sense, will in the long run prove more satisfactory. In functional cases, either simple neuroses of the stomach, or in those stomachal conditions which are caused reflexly by a diseased organ near by or far removed, the reports of the examination are often various. We may find on one occasion an increase of hydrochloric acid, free or combined, and on another, just the reverse. The same is true, but not to the same degree, of the organic ferments. Among the carminatives which he has found most useful in the treatment of various forms of functional dyspepsia, he especially mentions the compound tincture of cardamon, the spirit of peppermint, and Kirschwasser. The last owes its power to relieve flatus and quiet nervous irritability locally, to alcohol, and a small amount of prussic acid which it contains. Danish cherry cordial is palatable and useful; also the elixir of fennel and catnep. The latter is particularly desirable for infants. Of all the remedies for an irritable stomach, nothing practically is superior to the milk of bismuth, given in teaspoonful doses every hour or two. It may be supplemented now and then by milk of magnesia, or carbonate of soda. The use of secretins and pyloroduodenal extracts is the newest and possibly one of the valuable additions to the treatment of functional diseases of the stomach. Harrower states "from one to three grains of secretin-bearing extract is a sufficient and active dose. It is not harmful, although there are certain contraindications, among



which is functional hyperactivity, such as hyperchlorhydria, gastric and duodenal ulcer, etc."

---

**Blood-pressure Drugs:** Allan Watson, in the *Practitioner* for April, gives some observations on the value of drugs as blood-pressure elevators. His investigations were to compare their values as possible remedies for combating dangerous hypotension. He summarizes his results in a series of conclusions, as follows:

1. Atropin, camphor cotarnin, digitoxin, ergotoxin, and strychnin appear to be of no value as blood-pressure elevators.

2. Adrenalin appears to be a dangerous drug, which should be always used with caution, and never as a general blood-pressure elevator.

3. Eserin is an effective blood-pressure elevator, but on account of the distressing nausea, vomiting and faintness it produces, its use in cases of hypotension does not seem advisable.

4. Pituitary extract was found to have no pressor effect in his experiments. He suggests that its effect in cases of marked hypotension may be different, but he considers it of doubtful value.

5. Tyramin (parahydroxyphenylethylamin) is an organic base produced by the action of certain ferments on tyrosin. It is said to be the most important active constituent of watery extracts of ergot.

---

**Strychnin.** In the May number of the *American Journal of the Medical Sciences*, L. H. Newburgh writes on the use of strychnin in broken cardiac compensation. Many English and American clinicians are in the habit of prescribing strychnin for persons suffering from acute and chronic heart failure. Strychnin is used for this purpose because it is believed that it increases the work of the heart, and that it slows and steadies the pulse. Pharmacologists have not been able to demonstrate that strychnin increases the output from the heart. Clinicians have not shown that broken cardiac compensation can be relieved by strychnin. But since physicians continue to employ strychnin in the treatment of heart disease despite these facts, it is important to furnish data about which there can be no reasonable doubt. The cases were eight in number upon which observations were made. None of the patients were benefited by the drug. The compensation was not improved in the slightest degree. Four patients subsequently recovered their compensation as the result of digitalis administration. Two patients died in the hospital. The other two were discharged unimproved. The failure of strychnin to have its reputed effect cannot be explained by assuming that the patients under observation were beyond all therapeutic aid, because half of them did regain cardiac compensation when given digitalis. These four patients did not recover during the strychnin period solely because strychnin does not improve the work of the heart. He concludes that neither pharmacological nor clinical evidence justifies the use of strychnin in the treatment of acute chronic heart failure.

---

**Medical Meetings at the Panama-Pacific Exposition.**—The various societies, listed to hold their regular medical conventions and congresses in connection with the exposition, are as follows: Pacific Coast Oto-Ophthalmological Society, sessions June 14, 15, 16; American Society of Tropical Medicine, sessions June 14, 15, 16; American Association Medical Milk Commissions, sessions June 17, 18, 19; Pan-American Medical Congress, sessions June 17, 18, 19; American Climatological and Clinical Association, sessions June 18, 19; American College of Surgeons, session June 21; Medical Society of the State of California, session June 21; American Proctologic Society, sessions June 21, 22; American Therapeutic Society, sessions June 21, 22; American Hospital Association, sessions June 21, 22, 23, 24, 25; American Medical Association, June 21, 22, 23, 24, 25, 26; American School Hygiene Association, June 25, 26; American Academy of Medicine, June 25, 26, 27, 28.

## NEW AND NONOFFICIAL REMEDIES

During April the following article has been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies:

Knoll & Co.: Euresol pro Capillis.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies."

Standard Radium Solution for Bathing—A 5.2 per cent barium chloride solution containing radium chloride equivalent to 4.2 micrograms of radium per bottle. For "Actions and Uses" see the article on radium in New and Nonofficial Remedies. The barium in the solution is said to have no effect. The contents of a bottle, containing 4.2 microcuries or 10,000 Mache units are used for a bath. The Radium Chemical Co., Pittsburgh, Pa. (*Jour. A. M. A.*, April 17, 1915, p. 1325.)

Standard Radium Solution for Drinking—A solution of 2 micrograms of radium and 1.3 mg. barium chloride per bottle of 60 c.c. For "Actions and Uses" see the article on radium in New and Nonofficial Remedies. In view of the small barium content, it is claimed that the physiologic action of barium may be ignored. The Radium Chemical Co., Pittsburgh, Pa. (*Jour. A. M. A.*, April 17, 1915, p. 1325.)

Standard Radium Earth—A mixture consisting chiefly of silica and small quantities of carnotite, 450 gm. containing 0.45 micrograms of radium in the form of radium sulphate. For "Actions and Uses" see the article on radium in New and Nonofficial Remedies. For use the earth is mixed with water and heated for a time. The Radium Chemical Co., Pittsburgh, Pa. (*Jour. A. M. A.*, April 17, 1915, p. 1325.)

Standard Radium Compress—A compress containing 225 gm. of a mixture consisting chiefly of silica and barium sulphate containing radium sulphate equivalent to 15 micrograms of radium. For "Actions and Uses" see the article in New and Nonofficial Remedies on radium. Being applied wet, it is claimed that the action is partly due to beta and gamma radiation of the radium salt and partly to the radium emanation which is dissolved out by the water. The Radium Chemical Co., Pittsburgh, Pa. (*Jour. A. M. A.*, April 17, 1915, p. 1325.)

---

**Effects of the Harrison Law.**—"When the Harrison Law became effective, March 1, it was widely predicted that the result would be a besieging of hospitals by crazed drug addicts, a crime wave of national scope and a trail of suicides and death across the country. A month has passed, and while the results have not been as terrible as the early hysteria painted them, have not even approximated the glaring headline predictions of the yellow press, they have nevertheless," says *The Journal of the American Medical Association*, "been apparent to physicians and to others who come in daily contact with drug traffic. In the Philadelphia General Hospital—and this is true of practically every hospital in the country in which drug addictions are treated—the number of admissions has greatly increased. Without doubt the law has forced numerous habitués, who otherwise might have been satisfied to continue as such, to apply to physicians and institutions for treatment. Further, there is no doubt that the large majority of these unfortunates will be freed of their habit. The increased admissions to these hospitals do not represent an increase in drug addictions; they are simply an objective manifestation of the operation of the Harrison Law." A communication, which *The Journal* publishes, from the Cook County coroner's office presents the opposite side of the picture. It points to the suicide who anticipates his suffering as his supply of drugs ceases; it indicates the ever-hopeful victims who seek surcease of pain in deadly nostrums, and it hints at the deaths from secondary causes in weakened and collapsed bodies. It should again be emphasized that these reports are not evidence of the existence of enormous numbers of drug habitués; rather they represent the toll of a new law and the throwing of light on a hidden evil.



## The Academy of Medicine of Cleveland

### ACADEMY MEETING

The one hundred and nineteenth regular meeting of the Academy was held Friday, April 16, 1915, at the Cleveland Medical Library, the chairman, C. F. Hoover, presided.

The regular program follows:

#### 1. Report of a Series of Forty-four Cases of Extra-Genital Chancre, by H. N. Cole and Samuel Chieu.

Contraction of the disease via the extra-genital chancre occurred in this series largely during the active period of life. The extremes of age were represented by 2 years and 65 years. In married individuals the life partner was in most cases subsequently infected. The youngest case, occurring in a child of 2 years, was infected by her uncle in kissing. The chancre appeared on the right tonsil. Later, the child's father was also infected by kissing her, the chancre appearing on him in the same location. The mother was subsequently infected by the father, her chancre appearing on the genitalia.

Eighty per cent of the cases reported acquired their chancres on the lips. Other locations represented were, the tonsil in three cases, the hand in five cases, and the neck in one case. Chancre of the scrotum was represented by three cases, of the mons veneris in one case.

Four of the infections were acquired via bites, two men in the series being bitten by prostitutes, while one, a woman, was bitten by a man. Cold sores were given as the portal of entry of the infection in three cases, the immediate source of the infection being a common whisky bottle, coffee cup and drinking cup.

The single case of chancre of the neck, included in the series, seemed to be traceable to a cut received in that region, in a barber shop.

Too often the extra-genital chancre is undiagnosed because of its unusual location and appearance. Any sore in any location, tending to persist, and marked by induration with coincident glandular enlargement, should be regarded with suspicion. It has also been observed that when the primary lesion occurs on the face, the secondary eruption is apt to manifest itself earlier than usual.

In a chancre situated on the lips the possibility of gumma or carcinoma must also be considered. When in doubt in such cases, the dark field illuminator and the Wassermann reaction can be called into play.

The prognosis of extra-genital chancre is on the whole good. It is said, however, that in the case of chancres appearing on the face there is apt to be earlier involvement of the cerebro-spinal system than usual.

In the treatment of the extra-genital chancres one of the greatest difficulties encountered is to get the patient to report regularly for his therapy. Thus, in one of the cases in the series, treatment was absolutely refused. Of the entire series only 50 per cent have taken regular treatment.

Prophylaxis against the acquiring of extra-genital chancre is important. Use of common drinking cups is to be condemned, yet the practice still obtains in some hospitals. Restaurants should be compelled to boil all dishes at least five minutes when once they have been used.

The physician is too often a victim and acquires an innocent infection. Five per cent of the total cases occurred in members of the profession. No physician should make a vaginal examination without gloves, under any circumstances.

When once the condition has been diagnosed, the patient should be put on severe treatment. This should be pushed to the limits.

#### 2. Certain Phases of Diabetes and the Ductless Gland Diseases, by R. T. Woodyat, University of Chicago.

Experiments done on dogs to determine the sugar tolerance show that each animal has certain sharply defined limits of tolerance, which, when exceeded, cause the production of a glycosuria. However, a considerable amount of glucose can be added beyond this point when once established, without increasing materially the degree of glycosuria. Such a method, therefore, of estimating the sugar tolerance must be more or less inaccurate.

It would be of advantage to possess a method of determining accurately the sugar-burning power of the body. This could be used in diabetics for determining the progress of the patient. When sugar is administered the animal body changes it to other substances. In the first four hours, when given inwardly, the larger portion of the sugar is burned, but little being stored up. A true test should show how quickly the tissues can withdraw sugar from the blood and utilize it. The power of the body to burn sugar must be expressed in grams of sugar, per kilo, per hour.

The speaker has worked with such a method in the present experiments. By means of a specially designed apparatus, he has been able to inject, automatically, a given quantity of sugar per unit of time, intravenously. Experiments with various concentrations, thus injected slowly, give practically the same results as subcutaneous injection. This furnishes a good method for detecting a lessened sugar tolerance.

At the onset of diabetic coma there is acetone on the breath and sugar in the urine. In 24 hours, however, this is changed, the acetone being much decreased. Practically all cases of diabetes mellitus can be rendered sugar-free if they are starved. The acetone odor disappears from the breath, to be replaced by a uremic odor. There is Cheyne-Stokes breathing and albumin and casts appear in the urine. All the physical findings at the end, in such a case, suggest uremia. The question is, what kills diabetics? Is it logical, in such a case, to fill the patient with alkalis and to give sugar, intravenously, to combat a diabetes, which at that time does not exist?

The fact of the matter is that in cases of this nature an acidosis is set up; there is an actual increase in the H ion concentration of the blood and the patient dies from edema of the brain. Thus, the final treatment in late diabetic coma should be that for edema of the brain. Administration of sugar at such a time, and in such a case, is rational from the standpoint of its dehydrating effect. Too much alkali should not be given in such cases, as it causes a complete aneuria. It is also important to remember that sugar, when administered in these cases, where the body is unable to utilize it, acts as a diuretic.

Relative to the etiology of diabetes, there is one type of case which shows transient diabetes in infection. This may be explained on the basis of an inherent susceptibility, or tendency to diabetes, which when an infection is superimposed, manifests itself. Diabetes may be secondary to infection, not following immediately upon it, but later. Thus, in all the cases observed by the speaker, there was some history of infection preceding. Thus, also, in cases of diabetes which were secured early, chronic foci of infection have been cleaned up with marked benefit to the patient.

J. J. R. Macleod, in discussion, pointed out that slow intravenous injection produces the same effects as subcutaneous injection, causing an aneuria, with no sugar in the urine. There is no proof that sugar must undergo an amboceptor connection before it can be burned in the body. Clinically one is impressed with the existence of a definite tendency to diabetes.

G. W. Crile asked the speaker to what extent, clinically, could life be sustained by sugar injections, in a patient who does not take nourishment, but needs it, as in exophthalmic goitre, for example?

R. T. Woodyat, in rebuttal, said that for a period of eight hours twice as much glucose can be given as is required for heat, without setting up a glycosuria. By administering small amounts at short intervals, this could be kept up some time.



## EXPERIMENTAL SECTION

The eighty-first regular meeting of this section was held Friday, April 9, 1915, at the Cleveland Medical Library, the chairman, T. Wingate Todd, F. R. C. S., in the chair.

The regular program follows:

**1. Renal Mycosis (Lantern Demonstration), by H. R. Wahl.**

Fungi have been recognized as an etiological factor in producing pathological conditions in tissue, for many years. Virchow described the first cases implicating the green mold. The white mold has also been found to be an offender. These infections, if they may be so termed, occur in the skin, mucous membranes and ear. The rabbit is peculiarly susceptible. Injection of the green or white mold intravenously will produce infection.

In a case studied by the writer, of a rabbit treated by intravenous injection, the infection was found to have involved one kidney. The animal emaciated and finally died. The effected kidney was enormously enlarged, weighing 42 gms., as against 9 gms. for the sound kidney. The pelvis was found to contain a curdled milk exudate. Over the kidney were typical granulomatous nodules. These resembled tuberculosis. On section, the picture was also one strongly suggesting tuberculosis. Certain peculiarities are noted, however, which served to distinguish the condition from tuberculosis.

G. W. Moorehouse, in discussion, pointed out that the same fungi are also pathogenic for the human. The organism, further, is found to assume different forms. In a typical state it is acid fast, but other forms are found which are not acid fast. There are also mixtures of the two. Sera have been made in such cases and individuals infected show a reaction. There is a probability of establishing, under the head of pulmonary tuberculosis, a group of cases that really do not belong there. Thus, in certain institutions which receive only clinically hopeless cases of tuberculosis, it has been found that autopsy shows between 15 and 20 per cent of cases in which the lesions of tuberculosis cannot be demonstrated. Furthermore, many of the cases for which a fatal prognosis is given, live indefinitely at such institutions.

**2. Some Conditions Affecting the Toxic Dose of Strophanthin, by T. Sollmann.**

Wide variation in the toxic dose of the digitalis group of drugs is noted, depending on the preparation used. The toxic and effective doses are not so far apart. Thus, one should know the actual strength of the preparation he is using. This is best determined by observing what dose of a given preparation will produce systolic stoppage of the heart in frogs. However, the activity of a digitalis acting drug on the heart varies widely with the temperature. Thus, in obtaining such information a number of factors must be considered.

Using intact frogs it was found that the toxicity of the drug increased markedly with the increase in temperature. To obviate the criticism to these experiments, namely, that the absorption may vary in different animals, the same experiments were tried on excised frogs' hearts. The results were the same in all particulars.

The effect of temperature in the case of quabain is much greater, however. The temperature quotient, in the case of this drug, is almost squared, as illustrated by the change in the heart rate. Both the increased temperature of the heart and the increased rate, secondary to the increase in temperature, tend to increase the toxicity of quabain.

The relation of the concentration of the drug to its toxicity must also be studied. Thus, when lower concentrations were doubled, the effect noted in the response to the drug was much greater than when high concentrations were doubled. Further, the lower the temperature, the greater

was the effect of the drug, noted on doubling the concentration. Also, the feebler the activity of a drug, the greater was the increase of action noted when the concentration was doubled.

The response of any tissue to stimulation is limited. The point of the optimal reaction is ultimately reached. This general concept holds good relative to concentrations. A point is at length reached when doubling of concentration fails to call forth any increased response. As the maximal response is approached the increased response upon doubling the concentration becomes smaller and smaller.

### **3. A Preliminary Report on the Preparation of an Artificial Breast Milk, by H. J. Gerstenberger.**

An artificial infant food to be successful must nourish the child and must at the same time confer on it the greatest possible resistance. Breast milk is the ideal food. It nourishes and at the same time confers resistance. The problem before pediatricians, then, is to develop an artificial breast milk, which shall conform to the standards of natural breast milk and shall produce the same results, in so far as this may be possible.

Efforts for many years past have been to determine what the factors in cow's milk are which prevent it from being an ideal food like breast milk. Some 20 or 30 years ago the difference was thought to be due to the high per cent of casein in the former. Thus, the system then was to reduce this and make the protein content the same as in mothers' milk. The fat was still allowed to remain high.

About this time Cherny emphasized that the fat was responsible for much of the nutritional disturbance among infants fed on cow's milk. Later, Finklestein and Meyer suggested that the trouble lay in the salt and sugar content. One of the results of the various investigations was Friedenthal's milk. Infants put on this gained better and looked better, but they vomited and had green stools. The latter was thought to be due to individual intolerance.

Cows' milk contains about 10 per cent of the lower fatty acids, while breast milk contains only approximately 1 per cent. The high fatty acid content of cows' milk is responsible for most of the digestive and nutritional disturbances of infants. It causes a lowered resistance. Also, in children with poor nutrition and resistance, it causes a disturbance in the working of the pylorus. Too much fatty acid is allowed to pass into the duodenum at one time.

The attempt of the present research, working on the above basis, was to modify the fatty acids in cows' milk. This was found to be unfeasible. On the basis of reports from other investigators, the use of butter, washed free of its fatty acids, was considered. When cold water was used to wash the butter, it was found that it did not remove the fatty acids. When hot water was used, the fatty acids came away better, and food in which butter fat was used after being washed by the last method seemed to show a decrease in the amount of nutritional disturbance produced, when the latter was fed to infants. However, the use of butter was somewhat vitiated by the act that it did not mix well with other ingredients. The use of process butter was also tried, but proved of little value.

Previous investigators have claimed that by using 14 per cent coconut oil and 8 per cent lard, approximately the same fat was obtained as that found in breast milk. This fact was made use of in the present work. In addition, cod liver oil was added as a protection against vitamins. Food containing the preceding has been prepared, but has not been used in a sufficiently large number of cases to report.

It is further known that breast milk contains a higher percentage of iron than cows' milk. This fact will be considered in further work to be done in perfecting the food.

J. J. R. Macleod, in discussion, asked how active the lipase in a child's stomach is? Does lipase act on the fat in human milk? What are the microscopic conditions in the fat and casein in the clot of mothers'



as compared with cows' milk? What of the available alkali? All of these points must be considered.

J. E. Tuckerman pointed to experiments which have been done comparing the digestibility of butter and lard, the latter being found to be digested much more readily than the latter.

H. J. Gerstenberger, in rebuttal, said that lipase in the child's stomach is very active, much more so than in the stomach of the adult. The various points mentioned are factors and will be considered later.

---

## CLINICAL AND PATHOLOGICAL SECTION

The one hundred and eighth regular meeting of this section was held Friday, April 2, 1915, at the Cleveland Medical Library, the chairman, S. J. Webster, in the chair.

The regular program follows:

1. **The Diagnosis of Cardiospasm, with Report of Two Cases, by J. D. Osmond.**

During the acute phase of the disease the spasm occurs at intervals of days or weeks. The symptoms are dysphagia and cramp-like pains radiating to the back, neck and shoulder. Food taken during the paroxysm may be suddenly and violently rejected. Unless relief is afforded, the esophagus usually dilates around the spastic cardia until the capacity of the former reaches a pint or more.

In a given case, the presence or absence of syphilis, and the previous swallowing of caustics or foreign bodies should be determined. The history in the case is usually one of long standing, in which there has been discomfort and a choking sensation upon taking food; in which there has been periodic regurgitation of food; in which the regurgitated food does not taste sour. The patient is generally poorly nourished and has lost considerable weight.

Examination shows the persistence of food particles in the esophagus as long as 24 hours after a meal. The appearance of the swallowing sound at the cardia is delayed for from 12 to 20 seconds and is at times absent.

In differentiating cardiospasm from diverticulum it is to be remembered that the latter is most likely to occur upon the posterior wall of the esophagus, at the pharyngo-esophageal junction. Another type is found on the anterior wall near the bifurcation of the trachea. A third type occurs near the cardia, this latter form being, however, extremely rare. If, after a bougie has been easily passed several times, it meets firm resistance in the upper esophagus, a diverticulum is probably present. In cicatricial stenosis there is marked resistance to the passage of a bougie or stomach tube, and this resistance never varies except to increase. Syphilitic strictures are practically confined to the upper portions of the esophagus and are quite large in extent. Other signs of lues are usually present.

The use of the esophagoscope is necessary to determine the presence of ulcer, cancer, fissure or other pathological condition. The time element also helps differentiate cardiospasm from malignant growths. The X-ray is also of importance in demonstrating the greatly dilated esophagus.

Dilatation with the Einhorn dilator is the most satisfactory form of treatment. Overstretching the cardia is the only measure which will cure the condition.

The cases reported served to illustrate the points enumerated above.

F. W. Hitchings, in discussion, reported a case of cardiospasm. The patient was a girl, aged 20. She complained of shortness of breath, difficulty in swallowing, cough, and rarely, regurgitation. She had had measles eight years before and the difficulty in swallowing began shortly afterward.

The patient was very anemic, the swallowing time was increased between 20 and 25 seconds. Whenever the patient caught cold the condition became worse. As soon as the initial resistance was overcome it was found to dilate up to the point 10 on the gauge of the Einhorn dilator. Whale bone bougies were first used, later, one which would bend forward and backward but not laterally. The patient has continued to improve.

(Doctor Osmond's paper will appear in full in the June issue.)

## **2. Notes on Military Surgery, by G. W. Crile.**

The formation of the Western Reserve Unit for service in France had its inauguration following the request of the American Ambulance, to a number of universities of America, to furnish detachments of surgeons and nurses to man hospitals concerned in the treatment of soldiers wounded in the present war. The Western Reserve unit was recruited entirely from Lakeside Hospital, and in addition to the speaker and his associate, W. F. Lower, consisted of Doctors Ledbetter, Kieger, Sherry, Huffmann and Stone.

At the outbreak of the present war, the American colony in Paris started a hospital of 450 beds at Neuilly, a suburb of Paris. A new building recently erected for high school purposes was pressed into service. The institution was found to be well organized, with excellent nursing. The service of the Western Reserve unit embraced 150 beds. These were kept filled continually. The intake of new patients per day varied from 10 to 30, the maximum being 39.

The principal advances in military surgery, as noted in the data furnished by the present war, are the absence of typhoid and tetanus among the soldiers, due to the routine practice of administering antiserums. No cases of tetanus were seen by the party. However, when the warm weather comes, tetanus may be found to begin its onslaughts, due to the breaking of the ground in which the tetanus bacilli are known to abound. If the disease still remains in abeyance at that time, the credit then must be given to the tetanic antiserum.

The chief problems of military surgery are, perhaps, shock and infection. All of the wounds seen by the party were infected. Asepsis and antisepsis have broken down and failed in their strenuous trial in the present war. Iodin, bichlorid, phenol, and the remainder of the long list of approved antiseptics have been found to be of negative value.

The soil of France and Belgium has been under cultivation for centuries and has been treated with enormous quantities of fertilizer. The result is that the ground is laden with germs. In the trenches the troops become covered with dirt and germs on their bodies and clothes. Shrapnel shot and shell carry the dirty cloth into the wounds, so that there is a constant source of infection.

Gas gangrene, due to infection with the gas bacillus is especially common and great numbers of cases, were seen. The infection starts and progresses with astonishing rapidity, there is enormous swelling, moist gangrene sets in, and the patient usually dies in from one day to a week. The odor from such infections is terrible. Devitalized tissue is especially liable to infection by the gas bacillus. The treatment has been to clean out the foreign bodies in the wound and then to cut away the necrotic tissue.

The progress made in military surgery relative to the treatment of infections, since the time of the Franco-Prussian war, is practically nil. Present authorities have come to the conclusion that the use of antiseptics in infections, at the front, is of no value. If an efficient antiseptic were available it would be of inestimable value. For the purpose of discovering such an antiseptic, if possible, Alexis Carrel has recently abandoned active service in the field and is devoting his time to research.

The inefficiency of the dry dressing has also been demonstrated in the present war. It acts merely as a pus poultice. It has been found



that wounds do best either with a moist dressing, or when the part is immersed en masse in Wright's solution. The wounds also heal extremely well in sunlight or electric light. An interesting experiment was carried on in the hospital to prove, if possible, the relative efficacy of dry and moist dressing as compared with the open treatment of wounds where no dressings were used. Half of the patients had their wounds treated with moist or dry dressing, while the other half had no dressing at all applied to their wounds. It was found that the wounds treated in the latter way healed much more readily than those where moist or dry dressings were applied.

Wounds of the head abounded among the patients treated. This fact is the expected sequel of trench warfare. Treatment of such cases was found to be extremely unsatisfactory on account of the accompanying infection. The infected brain has small power of recovery, or if recovery does occur, the patient subsequently suffers from epilepsy or other complication.

Wounds of the jaws and mouth also abound, and for the same reason as wounds of the head. Practically all of these cases were turned over to the dentists of the hospital for treatment and the results obtained were extremely satisfactory. Similar procedure might be adopted more extensively in civil practice with advantage.

Penetrating wounds of the chest, in which the bullet went entirely through both sides, did well, healing entirely in from one week to ten days. However, these cases often developed pleurisy with effusion. There was no suppuration, however. Brewster tubes were used in these cases and worked very well.

Results in abdominal surgery were not so encouraging. All of the penetrating wounds of the abdomen did badly, most of the patients dying. These cases progressed more favorably, however, when instead of being operated, they were treated as cases of peritonitis from the start, large doses of morphin being given.

In the case of wounds of the genito-urinary organs it was found that wounds of the ureters and bladder did poorly. Most of the patients arrived after great swelling and extravasation had taken place.

Wounds of the arms and legs, in many of which the bones were badly shattered, did poorly. The patients with shattered bones of the upper thigh could not be moved decently and in many cases received no treatment for days. Most of them in the early days of the war died. The practice now is, however, to amputate such cases at the first base hospital. In civil practice, in dealing with cases of this nature, one can decide upon the method of choice in treatment and has every facility for carrying it out. In military surgery, however, it is different, so that these cases present many perplexing problems.

Wounds of the shoulder joint assumed importance because of the frequent concomitant injury to the brachial plexus. In a number of cases the nerve trunks were merely grazed by the balls. This produced, however, an effective though temporary paralysis, and it is interesting to note that the same principle was made use of in shooting wild horses in the west, to capture them, in the early days of this country. It is of extreme importance that injuries to nerves be looked for and found in suspicious cases.

Bone plating was not done, for the reasons that facilities for carrying out the measure in an ideal way were not at hand, and also because in a number of the cases the bones were found to be too badly shattered. However, it was found that in the case of compound infected fractures non-union very rarely occurred. The same is known to be true in civil practice.

Many false aneurisms of traumatic origin were encountered. More than 30 main trunks were ligated for aneurism and only rarely did gangrene follow. True aneurisms will probably occur later. It will take about a year for these to develop.

In the operations on nerves, it was found advantageous, after the ends had been reunited, to place about the line of junction a fat-fascia flap, the fat being next to the nerve itself. Fat is a non-conductor and the good results obtained by this method may be due to this fact.

Secondary hemorrhage was observed in a number of cases. Transfusion is extensively practiced in the French army.

No work was done on transplantation of limbs, because it was impossible to maintain sufficient asepsis for carrying out this work.

Shock and exhaustion really represent the great injuries of the war. These effect alike the soldier in the field and his friends and relatives at home. Many of the soldiers became insane at the first impact of struggle. The greatest strain came at that time with the result that the susceptible succumbed. (The Reports contributed by members of the Lakeside Hospital Unit will appear in the June number of this journal.)

---

## OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The seventy-ninth regular meeting of the section was held Friday, April 23, 1915, at the Cleveland Medical Library.

The meeting was called to order at 8:30 P. M., the chairman, J. E. Cogan, in the chair.

The minutes of the last meeting were read and approved.

### PROGRAM

W. C. Tuckerman showed a middle-aged man on whom he had done an Elliott trephine operation for the right eye for the relief of absolute glaucoma. Perception of light lost. 90 mm. mercury tension. The eye was markedly oedematous at the time of operation, but in spite of this the operation was done with comparative ease. After snipping the hole in the iris a small quantity of vitreous presented through the trephine opening. Present condition—the inflammation had almost subsided and the relief of pain was complete. From history and examination of the left eye which showed extensive posterior synechia, the condition was a secondary glaucoma.

Leo Wolfenstein presented a boy with traumatic detachment of the retina. The boy had been struck by a baseball several months previous, at which time there was hemorrhage in the anterior chamber which did not clear for a long time. The detachment was only recognized in the last two or three weeks, when the eye had cleared sufficiently to make out the condition of the fundus. Doctor Wolfenstein had examined the boy previous to the injury on account of failing vision which he could not account for. At present the good eye is also failing.

Doctor Wolfenstein's case was discussed by W. E. Bruner, who stated that there was probably beginning optic atrophy in the good eye. Doctor Bruner stated that he had a patient who was struck in the eye by a branch of a tree while following a hound. The laceration of the cornea healed kindly and the patient showed practically normal vision with normal fundus. One year later the same man came in with a marked detachment of the retina in the same eye. This could be laid to nothing except his injury of a year before. He said another man, a football player, showed a marked detachment of the retina in which he could remember no injury to the eye except a year previous. This raised the question whether this also could have been a late development of detachment. Edward Lauder mentioned a patient with high myopia in which the detachment followed the cranking of his automobile.

D. Prendergast was not present, but sent in his paper. The chair ruled that the paper should not be read unless the essayist was present.

Wm. B. Chamberlin reported four cases of foreign bodies in the hypopharynx and entrance of the esophagus removed by suspension laryngoscopy, showing the advantage of this method of procedure.



Paper discussed by W. H. Tuckerman.

Members present were Doctors J. E. Cogan, Quittner, Chamberlain, Wolfenstein, Bruner, Lauder, Kochmit, Rowland, W. C. Tuckerman, W. H. Tuckerman and J. E. Tuckerman.

---

### COUNCIL MEETING

At the meeting of the Council of the Academy of Medicine, held Wednesday, April 14, 1915, at the Bismarck, the following members were present: The First Vice-President, Doctor M. J. Lichty, in the chair; Doctors J. J. Thomas, Moorehouse, Webster, Sawyer, Weir, Storey, Way, Ford, Follansbee, Lester Taylor and J. N. Tuckerman.

The minutes of the last meeting of the Council were read and approved.

On motion the application of Doctor Frederic C. Curtis was denied.

On motion Doctor J. W. Epstein was elected to active membership.

On motion the names of the following applicants for active membership were ordered published: B. I. Brody, L. S. Brookhart, Robert Clarke, N. L. Coy, A. N. Dawson, E. W. Garrett, Otto L. Goehle, W. C. Greenwald, Jerome A. Heath, Frank J. Kern, Hubert C. King, L. W. Krauss, L. B. Lemon, Abraham Strauss.

On motion the names of the following applicants for associate membership were ordered published: Bradley M. Patton, Ph.D.; Weston A. Price, D.D.S.; Chas. K. Teter, D.D.S.; Wm. C. Teter, D.D.S.

The following were reinstated in membership in the Academy: Active membership—J. H. Brett, O. P. Walker. Non-resident membership—Arthur J. Hill, of Canton, Ohio.

The resignations of Junius H. McHenry, now of New York City, and of J. D. Pilcher, University of Nebraska, Omaha, Neb., were accepted.

On motion H. V. Riewel was given a letter of recommendation and transfer to the San Diego County Medical Society of California.

On motion the transfer of Nicholas F. Curtis, a member of the Toledo Academy of Medicine, was authorized upon the receipt of the annual dues for 1915.

The Secretary was directed to communicate to E. C. Konrad that he could be reinstated in active membership upon complying with the provisions of the Constitution and By-Laws of the Academy.

---

**Typhoid Epidemic.**—An epidemic of typhoid occurring in the St. Louis City Hospital is reported by W. P. Elmer, St. Louis (*Journal A. M. A.*, April 3, 1915), who especially notes the experience with anti-typhoid inoculation. The epidemic began late in August, and anti-typhoid vaccine was used during that month and the following, in 261 cases. There were forty-three cases in all, and no fatalities; twenty-three cases developed among those who had received no vaccines. Twenty of the patients received one or more doses of the vaccine, between August 28 and September 14, or during the early period of the exposure. Summaries of these cases are given. The following are the author's conclusions: "The use of antityphoid vaccine in persons who are harboring typhoid bacilli does not increase the number of those who develop typhoid. A single injection, or more, directly preceding or during the incubation period of the disease does not render the individual immune. The course of the disease does not seem to be modified by injections of vaccine directly preceding the onset in those who develop typhoid. The advisability of giving antityphoid vaccine to those presumably infected seems questionable and may in a few instances precipitate an attack."

## BOOK REVIEWS

**A Text-Book of Medical Diagnosis.** By James M. Anders, M.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College of Philadelphia, and L. Napoleon Boston, M.D., Professor of Physical Diagnosis, Medico-Chirurgical College, Philadelphia. Second Edition thoroughly revised. Octavo of 1248 pages; 500 illustrations, some in colors. W. B. Saunders Company, Philadelphia and London, 1914. Price, cloth, \$6.00 net. Half Morocco, \$7.50 net.

This book is a comprehensive text in general diagnosis, including tropical diseases, neurology and laboratory methods. One rather unusual feature is the use of illustrative cases, considered under the headings of family and past history, social history, present illness, physical findings, and course of the disease. Differential diagnosis is also well epitomized in vertical columns for the different diseases, with their respective symptoms contrasted. The book is admirably illustrated. In the section on neurology, many typical gaits and postures are shown in serial "moving pictures." In the second edition, the authors have added a number of newer subjects, such as electrocardiography and gastroscopy, with 35 excellent colored views of the interior of the oesophagus, stomach and pylorus, as seen through the gastroscope. Laboratory methods are extensively considered, including the Wassermann reaction. The authors have certainly written from a broad knowledge of medicine and are thoroughly informed in new methods. V. C. R.

---

**The Practical Medicine Series.** Volume VI. General Medicine, edited by Frank Billings, M.D., Head of the Medical Department and dean of the faculty of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Illinois Post-graduate Medical School. Series 1914. The Year Book Publishers, Chicago. Price of this volume, \$1.50.

This volume completes the review of infectious diseases started in Volume I, and also covers diseases of the alimentary tract, liver, pancreas, spleen, and peritoneum. The section on gastric diseases shows the enormous literature on this subject. In a general way, one sees an increasing tendency to emphasize the frequency of extra gastric conditions in the production of the various minor gastric syndromes. Cancer, ulcers, and a frank gastritis are the main intrinsic diseases of the stomach. X-ray diagnosis of both gastric and intestinal conditions is very important, but the caution in the interpretation of plates and the necessity of correlation with clinical evidence are everywhere insisted upon. The importance of oral sepsis in various conditions is considered at length. More emphasis is given to prophylaxis, as it is being recognized that removal of septic foci in advanced conditions, such as arthritis deformans, is of relatively little advantage. The tendency of dentists to try to preserve teeth by prolonged treatment, where they should be removed, is deprecated by a dental writer. Closer co-operation of dentists and physicians in these border-line cases is desirable.

One must repeat his appreciation of these well selected reviews in these days of voluminous medical literature. V. C. R.

---

**Painless Childbirth.** A General Survey of all Painless Methods, with Special Stress on "Twilight Sleep" and Its Extension to America. By Marguerite Tracy and Mary Boyd. Frederick A. Stokes Company, New York, 1915. Price, cloth, \$1.50 net.

This book consists of a more or less orderly presentation of the several magazine articles written by the authors, together with a rather detailed description of the experiences, impressions, and difficulties met with by them at Freiburg, gathering material for publication.



It impresses the writer as a rather marked example of the trite saying that "a little knowledge is a dangerous thing." The authors, after necessarily comparatively limited experience and observation, do not hesitate to assume the responsibility of unreservedly advising American women to demand the use in childbirth of Morphin and Scopolamin, two drugs whose well-known potency abundantly justifies the conservatism with which the medical profession has received the advice to use them systematically in labor cases.

The work contains a large number of quotations from scientific articles on the subject, and is skillfully adapted to serve its evident purpose, viz., to arouse a public demand for extensive use of the Freiburg method. On the whole the book evidences greater knowledge of psychology than of scientific medicine. Any obstetrician who may need a little reminder to use his best efforts toward relieving the pain of the parturient can do no better than to read this book.

A. J. S.

---

**Minor and Operative Surgery, Including Bandaging.** By Henry R. Wharton, M. D., Surgeon to the Presbyterian Hospital, and the Children's Hospital; Consulting Surgeon to St. Christopher's Hospital, The Bryn Mawr Hospital, and Girard College; Fellow of the American Surgical Association. Eighth Edition. Enlarged and thoroughly revised, with 570 illustrations. Lea & Febiger, Philadelphia and New York, 1913.

This edition is enlarged and thoroughly revised, containing much that is new in surgery. It opens with a chapter on Bandaging, which contains many excellent illustrations. It deals with the different kinds of bandages and describes them very simply and accurately.

The second chapter is on Minor Surgery, and includes surgical dressings, minor surgical procedures, wounds, burns, etc. This chapter is very instructive, as is also the one on Asepsis and Antisepsis.

The last five chapters, covering about 300 pages, deal with fractures, dislocations, amputations, excisions of joints, resections and special operations, which is entirely too much subject-matter for so small a space.

As a whole, the book is well written and contains many valuable points.

O. A. W.

---

**Beriberi.**—The experience with beriberi among the Philippine scouts is reported by W. P. Chamberlain, Plattsburg, N. Y. (*Journal A. M. A.*, April 10, 1915), who was in charge of the beriberi work in Manila from 1910 to 1912, during which time it was eradicated. Most authorities now accept the theory that beriberi is the result of a diet deficient in certain substances termed "vitamins," which are essential for the normal functions of the nervous system. There are still some doubters, however, who claim that beriberi is probably an infection, and for this reason, he offers the present publication. In this he gives the statistics of the disease as it occurred in the Philippine troops, the rations before and after the disease was attacked by the medical authorities, and also some experimental investigations on fowls are mentioned. The points made are conclusive and fully support the deficiency theory. The disease still prevails among the civilian native population, but the military has been practically exempt since treatment has been instituted, based on this theory. The addition of a proportion of unpolished rice, beans, et cetera, to the diet has proved a thorough success.

## MEDICAL NEWS

**Doctor Allen B. Kanavel to Address Cleveland Academy of Medicine in June.**—The attention of the Academy of Medicine is called to the visit to Cleveland of Doctor Allen B. Kanavel, the Assistant Professor of Surgery at Northwestern University Medical School of Chicago.

Contrary to our usual custom, we have invited an out-of-town man to address the Academy at the general meeting in June, and we feel that in Doctor Kanavel we have a man who will command the interest of the Academy members at a time when medical meetings are not especially popular.

Doctor Kanavel is the attending surgeon at Wesley and the Cook County Hospital of Chicago. He is a member of various surgical associations and has contributed widely to literature covering a wide range of subjects.

His book on "Infections of the Hand" has already gone through two editions and is the last surgical word on this difficult phase of surgery. He has also contributed to Keen's "System of Surgery." His articles have comprised contributions to "Surgery of the Spleen," both experimentally and clinically, "Experimental Investigations of the Repair of Fractures," and articles on "Hypophysial Tumors," presenting a new method of reaching the hypophysis.

His talk before the Academy will cover his experimental and clinical experiences in the "Surgery of the Ductless Glands."

---

**New Commissioner of Health for Pennsylvania.**—Doctor Samuel G. Dixon, whose nomination as Commissioner of Health was sent to the Senate on Monday by Governor Brumbaugh, was today confirmed by that body.

This is Doctor Dixon's fourth appointment to this responsible position, and within a few days he will have completed ten years of service in this office which is of such vital importance to the welfare of the people of the Commonwealth.

Governor Pennypacker appointed Doctor Dixon on June 6th, 1905, shortly after the passage of the Act of Assembly creating the State Department of Health. He was re-appointed March 1st, 1907, by Governor Edwin S. Stuart, and on March 1st, 1911, by Governor John K. Tener.

Under his able direction the Pennsylvania Department of Health has achieved first place among the public health organizations in this country, and the work which has been accomplished has attracted attention at home and abroad.

At the present time the Department has between three and four thousand employees and its activities reach to every section of the State.

In the campaign against tuberculosis, which ten years ago was the chief cause of death in Pennsylvania, one hundred and fifteen tuberculosis dispensaries have been established and three great State Sanatoria at Mont Alto, Cresson and Hamburg have been constructed under the supervision of Doctor Dixon. In ten years tuberculosis has fallen from first to second place as a cause of death in this State, and the rate is steadily declining year by year.

Four thousand deaths and forty thousand illnesses from typhoid fever was the annual toll exacted from Pennsylvania's citizens ten years ago. Today this has been decreased more than 75 per cent, and although in the meantime the population of the State has increased more than a million, the number of deaths from this cause is only one-fourth the former figure.

During the past year the death rate of 13.9 per thousand inhabitants was the lowest in the history of the State. More than seventy-eight thousand people are alive in Pennsylvania today who would have died had the death rate of 1906 continued. Of these 78,916 lives, 40,528 have been saved by the reduction of four principal diseases.



Typhoid fever.....	18,865
Tuberculosis .....	11,924
Diphtheria .....	4,648
Whooping cough .....	4,091

During these years 1,767,000 babies have been born in Pennsylvania, whose births have been recorded, with all the facts concerning them, in the Bureau of Vital Statistics of the Department of Health.

Since its establishment the Pennsylvania Department has served as a model for numerous other States that have desired to profit by the methods which have been here inaugurated.

### RELIEF FOR BELGIAN PHYSICIANS

For Members of Committee, 56 Medical Journals, The American Commission for Relief in Belgium, and others.

Report of the Treasurer of the Committee of American Physicians for the Aid of the Belgian Profession.

For the week ending May 15, 1915.

#### Contributions:

Doctor Franklin B. Miller, Pittsburgh, Pa.....	\$ 25.00
Doctor N. S. Jarvis, Captain U. S. A., New York, N. Y.....	15.00
Doctor Charles G. R. Jennings, Elmira, N. Y.....	25.00
Doctor H. E. Jenkins, P. A. Surgeon, U. S. N., Port Royal, S. C.	23.00
Doctor Luther G. Paul, Boston, Mass.....	5.00
Doctor M. C. Smith, Lynn, Mass.....	5.00
Arkansas Medical Society, Little Rock, Ark.....	50.00
Doctor Charles Henderson Miller, Chicago, Ill.....	10.00

Receipts for the week ending May 15th.....	\$ 140.00
Previously reported receipts.....	6,720.50
Total Receipts .....	\$6,860.50

#### Previously reported disbursements:

1,625 Standard Boxes of food @ \$2.20.....	\$3,575.00
1,309 Standard Boxes of food @ \$2.30.....	3,010.70

Total Disbursements .....	\$6,585.70
Balance .....	\$ 274.80

F. F. SIMPSON, M. D., Treasurer,  
7048 Jenkins Arcade Bldg.,  
Pittsburgh, Pa.

The American Social Hygiene Association has been offered a prize of \$1,000 by The Metropolitan Life Insurance Company, to be awarded to the author of the best original pamphlet on social hygiene for adolescents between the ages of twelve and sixteen years, approved by a committee of judges to be selected by the Association.

Competition for this prize is open to all.

The Metropolitan Life Insurance Company desires to use the winning pamphlet among its industrial policy holders.

The Committee of Judges will conduct the competition in accordance with the following conditions:

Contest closes July 31, 1915, at midnight; any manuscript received later will not be considered.

Manuscripts should not exceed 3,500 words and must be in English, and must not have been previously published.

Manuscripts must be typewritten on one side only of plain white paper 8" x 10½".

Manuscripts must be paragraphed and punctuated for submission as "copy" to printer.

Each manuscript must bear some identifying mark or pen-name, but not the name of the author.

The author's name and address, and the identifying mark or pen-name should be in a sealed envelope, accompanying the manuscript; the face of the envelope should bear the mark or pen-name only.

More than one manuscript may be submitted by the same author.

The winning manuscript, in consideration of the award of \$1,000, becomes the property of the donor of the prize, all rights therein being surrendered by the author.

The right to purchase any manuscript submitted, at the rate of 5c a word, is reserved by The Metropolitan Life Insurance Company and by The American Social Hygiene Association.

Any manuscript not winning the prize or purchased will be returned to the author if return postage is provided.

Address manuscripts and requests for further information to

THE AMERICAN SOCIAL HYGIENE ASSOCIATION,

105 West 40th Street,  
New York City.

---

**The San Francisco Session—Changes in Schedule of Special Trains.**—Attention is called to a change in the schedule of the American Medical Direct Route Special, which has just been announced. Instead of one train leaving Chicago at 5:30 P. M. Friday, June 18, as previously stated, there will be two trains over this route: first, an extra fare train (extra fare \$10), leaving Chicago Friday, June 18, at 7 P. M., and arriving in San Francisco Monday, June 21, at 10:10 A. M., and second, a train leaving Chicago Thursday, June 17, at 9:30 P. M., and arriving in San Francisco at 8:55 P. M. Sunday, June 20. The latter is a regular fare train.

The special train for San Francisco, for members of the Sections on Ophthalmology and on Laryngology, Otology and Rhinology who will be in attendance on the meeting of the American Laryngological, Rhinological and Otological Society, will leave Chicago at 8:05 P. M., June 16, instead of June 15, as originally stated. The itinerary of this train will be the same except that it will be one day later than the schedule previously announced, arriving in San Francisco on Sunday, June 20, instead of on Saturday, June 19.

For the announcement of other special trains, see *The Journal*, May 15, 1915, page 1707.

#### **Take Extra Wraps to San Francisco**

The local Committee of Arrangements desires to emphasize the suggestion already made to Fellows who plan to attend this meeting, that the mornings and evenings in San Francisco are usually windy and chilly and that there may be cold fogs. It is advisable, therefore, for visitors to provide themselves with medium-weight clothing and to have at hand suitable wraps and overcoats.

---

**Examination of Dentists for the U. S. Army.**—The Surgeon-General of the Army announces that examinations for the appointment of Acting Dental Surgeons will be held at Fort Slocum, New York; Columbus Barracks, Ohio; Jefferson Barracks, Missouri; Fort Logan, Colorado; and Fort McDowell, California, on Monday, October 18, 1915.

Application blanks and full information concerning these examinations can be procured by addressing the "Surgeon-General, U. S. Army, Washington, D. C."



The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 21 and 27 years of age, a graduate of a dental school legally authorized to confer the degree of D. D. S., and shall be of good moral character and habits.

Acting Dental Surgeons are employed under a three years' contract, at the rate of \$150 per month. They are entitled to traveling allowances in obeying their first orders, in changing stations, and in returning to their homes at termination of service. They also have a privilege of purchasing certain supplies at the Army commissary. After three years' service, if found qualified, they are promoted to the grade of dental surgeon with the rank of first lieutenant, and receive thereafter the pay and allowances appertaining to that rank.

In order to perfect all necessary arrangements for the examination, applications must be in the possession of the Surgeon-General at least two weeks before the date of examination. Early attention is therefore enjoined upon all intending applicants. There will be 12 vacancies to be filled.

---

**Nutrition and Growth.**—L. B. Mendel, New Haven, Conn. (*Journal A. M. A.*, May 8, 1915), says growth receives its impetus from two sources of influence in a general way; an internal factor, representing in good part the hereditary features, including the inherent growth impulse, and an external factor, involving the environment of growth and the food supply, et cetera. If growth were merely the resultant of food assimilation, the problems would be somewhat simplified, but the pathology of growth may be shown coexisting with perfect nutrition. In this paper he considers chiefly the food factor, the energy factor, the historical aspects of nutrition, referring to the older work of Voit, that of Rubner since his time, and the still later conceptions of metabolism, connected with the name of Aberhalden. These are discussed at some length. We no longer picture the food products, in the new conception, entering unchanged or only slightly altered into the cycle of metabolism. The significance of the new units has come into the foreground. The tissues collect their constructive units out of the broken up alimentary contents, and the probability of a relation between the various proteins serving as food and the body proteins are recognized as conspicuously different. Much more investigation is still needed to state the role of the amino-acids in the system. They furnish the protein requirement, and experimental work demonstrating the *how* is a hard problem. Growth depends essentially on the supply of each needed amino-acid, which the organism can select. Carbohydrates are also essential, and the evidence on hand, Mendel says, does not warrant us dogmatically concluding which one of the familiar dietary sugars is most essential. The role of fats and lipoids in growth is also discussed, and his own experiments have suggested the presence of certain substances which, though in a minimal amount, may be indispensable to growth and the maintenance of life. These substances have received different names: "vitamins," "Mitosone," et cetera. These bring up problems in physiologic chemistry which still require solution. We have yet to learn, Mendel says, where the essential substances are to be found, aside from a few products mentioned, and in conclusion, he quotes a warning written by Rubner as a protest against the creation of a new scientific vocabulary, and substituting unhealthy speculation in the play of words for laborious experimentation in these researches.

**Mouth Infection.**—C. H. Mayo, Rochester, Minn. (*Jour. A. M. A.*, Dec. 5, 1914), has noticed some general facts in regard to infections that have not been fully appreciated up to a late date, especially of the mouth as a harbor of many germs, and the number of germs which are constantly being taken into the gastro-intestinal tract, and mentions certain important points that have recently been added to our knowledge of bacteria which live in the blood in all infectious diseases. We have long known that bacteria are specific in type in many disorders. Rosenow has lately shown that changes in environment may so alter bacteria as to affect their specific action. In the blood stream the various forms are selective in choosing their location, and thus produce a local disease. The old "idiopathic osteomyelitis" of a child we now know may follow a short time after a specific tonsillitis and pyorrhea, or sinus disease may be the cause of an infection we call rheumatism. The sinuses in mouth and throat infections develop anaphylaxis from constant poisoning, and their results are shown in high fevers, asthmas, hives, et cetera. Rosenow's work is going far to show that systemic ulcerous conditions exist in which the mucosa is attacked from behind through the blood stream by bacteria that have a selective affinity for these special areas. The liver and the appendix are also thus affected, and cancer is produced sometimes by some acid-producing or acid-bathed substance. The stomach is a common location while the alkaline small intestine is rarely affected, but again, the large bowel reverts to an acid reaction and is very subject to cancer. Enough is known concerning infections and their mode of entrance to make us consider the diseases of the mouth and respiratory tracts as serious menaces. Much can be done by more general and effective school inspection. Tonsils and adenoids should be looked after, development of the teeth should be watched, and in chronic and recurring diseases search must be made to establish positively the non-participation of these regions.

**Typhoid Fever.**—The report of a typhoid epidemic in the Minnesota School for Feeble-Minded and Colony is given by E. H. Trowbridge, B. A. Finkle and Elizabeth M. Barnard, Faribault, Minn. (*Journal A. M. A.*, Feb. 27, 1915), in which a number of cases had occurred among patients who had undergone, after a previous epidemic, antityphoid inoculation. Several cases are given in detail, and the factors which might have influenced the epidemic and brought about its unexpected results, are given. So far as the authors have been able to ascertain, there is no similar case on record in literature. The infection was traced to a dairyman, who had not received prophylactic treatment, and who had himself been infected by a milker, one of the inmates. The population of the institution had one of their chief sources of food supply thus contaminated with typhoid bacilli continuously for several months. The antityphoid vaccine used was prepared by the State Board of Health, and used within the specified time limit and kept at the proper temperature. The method of administration, the dosage and the time interval were observed, as recommended by the State Board, except that 10 minims instead of  $7\frac{1}{2}$  were given at the first inoculation. The authors conclude that it is evident that typhoid vaccine in some cases fails for immunity or confers only partial immunity in some cases. They sum up their conclusions as follows: "1. Typhoid fever may be contracted by individuals who have received the prophylactic and who subsequently show a positive Widal. 2. The course of the disease is not appreciably shortened in vaccinated individuals. 3. The mortality is markedly reduced among protected persons. 4. Protected persons having typhoid fever fail to give many of the classical symptoms of the disease. 5. The development of paratyphoid is not prevented by the use of the typhoid prophylactic. 6. The degree of immunity conferred by the prophylactic in some cases fails to prevent the development of typhoid, when the individual has been subject to repeated exposure. 7. The Widal reaction as a criterion of the presence of immunity is of uncertain value."



# The Cleveland Medical Journal

---

Vol. XIV.

JUNE, 1915

No. 6

---

## THE OGILVIE METHOD OF TREATMENT OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM WITH STANDARDIZED SALVARSANIZED SERUM—A PRELIMINARY REPORT OF SIXTEEN CASES.

By WILLARD C. STONER, M. D., Visiting Physician, St. Luke's Hospital, Cleveland.

It is not the writer's purpose to give a detailed report of this series of cases treated intraspinally according to the method of Ogilvie, for sufficient time has not elapsed to draw definite conclusions, but to briefly outline the technique employed, the behavior of cases subsequent to treatment, and call attention to clinical and laboratory improvement.

Swift and Ellis, in 1912, were the first to introduce a method for the intraspinal treatment of syphilis. Since that time much work has been done, not only in our country, but abroad, in the problem of intraspinal treatment of this condition. The rationale of this method of treatment is established and results more than justify the procedure.

Since it is established that syphilis of the central nervous system (it matters not what form it may assume) is an active syphilitic process, and that little or no antisiphilitic treatment introduced in the body reaches the spinal canal, the need of intraspinal treatment has been made evident. Further, it has been shown that when substances, such as trypan blue are introduced intraspinally, the dye penetrated not only the meninges but deeply into the nerve tissue, which is not true when introduced intravenously in much greater concentration.

As is well known, their method consists of salvarsanizing the patient intravenously and one hour afterward, removing the blood, preparing, and introducing intraspinally. It is readily seen that this method does not permit of standardizing.

---

From the Department of Medicine, St. Luke's Hospital.

Other methods of treatment devised consist of (1) introducing solutions of neo-salvarsan directly, which is questionable on account of marked irritative symptoms produced. (2) Neo-salvarsan in human serum subjected to 56 C. for thirty minutes, then 37.5 C. for forty-five minutes, and introduced intraspinally. Untoward symptoms followed injections. (3) Later same authors prepared serum in same manner and introduced intracranially in cases of paresis. Marked untoward symptoms followed injections. (4) The method of Ogilvie, which consists of salvarsanizing blood serum in vitro of a known strength, is the one used by the writer in the treatment of a series of sixteen cases of various manifestations of nervous syphilis.

The technique briefly outlined is as follows: Approximately 60 c.c. of blood is withdrawn, and after allowing to stand for a short time at room temperature, is centrifugalized, which should give a clear serum absolutely free from haemoglobin and blood cells. To 15 c.c. of this serum is added 0.25 mg. to 1.0 mg. of freshly prepared solution of salvarsan, made in the usual manner, taking 1.0 dg. of salvarsan to 40 c.c. of distilled water. One should exercise care in not adding an excess of sodium hydroxide, only carrying the solution to a very faintly alkaline reaction. After mixing thoroughly, it is subjected to a temperature of 37° C. for forty-five minutes and then 56° C. for thirty minutes. This should be injected not later than three hours after its preparation.

The lumbar puncture is done in the usual manner, 15 c.c. of cerebro-spinal fluid removed and 15 c.c. of the salvarsanized serum introduced gently by gravity, by connecting up a container such as the barrel of a Leuer syringe. The patient should remain absolutely flat in bed for twenty-four hours.

In the sixteen cases treated with a total of forty-two injections, no untoward symptoms arose (save pain in approximately 50 per cent of the cases) which generally required no means of relief and passed off in twelve hours. Head pains do not occur, as is common following lumbar puncture, and the pains associated with the condition are generally completely relieved in two or three days. After twenty-four hours, they generally suffer no or very little discomfort and are able to work. In only two cases were the pains very severe and these were cases of tabes, where .75 mg. was given. The treatments have been repeated



every two weeks and in cases with positive blood stream to the Wassermann an intravenous 0.3 gm. salvarsan was given in a week subsequent to intraspinal treatment.

The cases treated give peculiar interest, inasmuch as a number of them have had intensive intravenous salvarsan therapy and some mercurial therapy over a period of two years. I do not feel justified in giving a detailed report on the behavior of each case as the intraspinal treatment dates back only five months, which is not sufficient time to draw conclusions on the value of giving more than transitory relief.

The cases consist of the following clinical classification: 6 tabes; 1 paresis; 4 cerebro-spinal syphilis; 3 cerebral syphilis; 1 syphilitic hemiplegia; 1 syphilitic psychosis (?). This group of cases received a total of forty-two injections at two week intervals. The greatest number of treatments given a single case were six. The reaction, such as pain on repeated injections, does not seem to increase and many cases experience no reaction whatever. The clinical improvement in certain cases has been striking, and one is encouraged to believe that the method is a valuable adjunct to the rational treatment of these hitherto hopeless cases: One case of cerebral syphilis, that had a second syphilitic infection following an intensive salvarsan intravenous treatment of an infection just one year previous to his reinfection, developed severe head pains, which were not relieved with intravenous salvarsan treatment and intramuscular mercurial treatment. A lumbar puncture gave a lymphocyte count of three hundred and seventeen cells, to  $3 \frac{2}{5}$  c. c. m. of cerebro spinal fluid, a positive syphilitic globulin as evidenced by the Lange test, and a positive Wassermann with both an alcoholic and cholesterinized antigen. After three intraspinal treatments, his head pains were completely relieved, his general mental condition much improved, and the laboratory findings on the fluid gave a negative Wassermann with all antigens, a negative Lange, and a cell count within normal limits.

Cases of cerebro-spinal syphilis have lost their pains, deep reflex disturbances, and show decided changes in lumbar puncture findings. Early the cell counts are brought to normal, but the Wassermann and Lange globulin tests persist more or less to a degree of positiveness. The sensitiveness of the Lange globulin test and its behavior toward syphilitic and non-syphilitic globulin make it an extremely interesting check on the study of the fluids subsequent to each intraspinal injection. A few times we have observed on examining the fluid two weeks sub-

sequent to an intraspinal treatment, that the Lange globulin test gives a nonsyphilitic curve, which is no doubt evidence of the presence of a blood globulin from the previous treatment.

Early cases of paresis treated intensively show marked improvement, both mentally and physically. Laboratory findings closely parallel the clinical improvement. One case of psychosis of questionable classification, but not a paretic, who had a marked syphilitic infection as evidenced by a very positive Wassermann in the blood, but a negative lumbar puncture, was given an intraspinal treatment to determine what effect it might have on the mental condition. The day following the injection, his mental state became practically normal and he has remained much improved. A second intraspinal injection was given in three weeks on the supposition that the toxemia of his syphilitic infection might be a factor in his abnormal mental state. It was found on examination of the fluid three weeks subsequent to the first injection, an increase of lymphocytes up to sixty-five cells, to  $3 \frac{2}{5}$  c. c. m. of cerebro spinal fluid, but the Wassermann and Lange tests were both negative. This is a splendid example of the production of a lymphocytosis which is non-specific, no doubt, due to the presence of a small quantity of arsenic in the spinal canal. This observation confirms the experimental work of others on lower animals where large quantities of neosalvarsan have been injected, producing a marked lymphocytosis. It would seem that intraspinal treatment is contra-indicated in cases with positive blood streams and negative lumbar puncture findings.

One case of syphilitic hemiplegia of nine years standing with a more recent interstitial keratitis gave marked improvement with intravenous and intraspinal treatment. The eye condition cleared up, the anemia disappeared, and a gain in weight and strength was very marked.

Two cases of tabes with Charcot joints lost their last remnant of pains following intraspinal treatments that had persisted after intensive intravenous and mercurial treatment. It is striking to observe the loosening of the tight pupil, the lessening of ataxia, the disappearance of crises, and the general improvement of the mental and physical state.

To one interested in the problems of internal medicine, the management of these cases have afforded unusual interest, both clinically and in the laboratory. In conclusion I may say that we are learning to treat syphilis just as we are learning to diagnose it.



That the problem is not settled and can only be more settled by careful work over an extended period of time, but for the present we must take advantage of every rational means at our command to diagnose and treat a condition that until now has been clinically incurable, often unrecognized, and even now must be regarded pathologically incurable. Three facts have been definitely established: (1) That the lumbar puncture is the most valuable diagnostic means in determining the presence of a nervous syphilis, giving evidence in practically 100 per cent of the cases where the blood stream is often negative. (2) That there is practically no contra-indication for intravenous salvarsan treatment of syphilis, that if intensively and judiciously employed, it is the best means at our command in the hope of clinically curing general syphilitic manifestations, and (3) That intraspinal treatment is an adjunct in the management of syphilis of the central nervous system, that gives us new hope.

1110 Euclid Avenue.

---

**Feeding of Bile**—J. C. A. Gerster, New York (*Journal A. M. A.*, June 5, 1915), reports the case of a man who, after an operation for gall-stones, suffered from a biliary fistula through which all the bile escaped, leaving him in a pitiable condition. Tentative closure of the fistula caused cramps and failed to divert the flow of the bile into the duodenum; evidently there was obstruction of the common duct. The patient's general condition forbade operation and, following the method described by Schmilinsky in a similar case, all the bile was collected through a catheter snugly fitting the fistula and passed into the stomach by the stomach tube twice a day (8 ounces each time), causing remarkable improvement. Fifteen days later a stone impacted in the papilla of Vater was taken out under local anesthesia. After the second day convalescence was uneventful and the man was discharged cured three weeks later.

## REMARKS ON THE SYMPTOMS AND DIAGNOSIS OF INCIPIENT PULMONARY TUBERCULOSIS\*

By STEPHEN A. DOUGLAS, M. D., Superintendent State Sanatorium  
For Incipient Pulmonary Tuberculosis, Mt. Vernon, Ohio.

It is almost with apology that I come before you with the well-worn subject, "Symptoms and Diagnosis of Incipient Pulmonary Tuberculosis," without further chart or compass or other limitations, I am giving myself lee way to sail my verbal craft uncharted into either the salted or unsalted seas, wholly oblivious and unmindful of my destination or return.

Modern medical literature deals constantly with this subject of early diagnosis, which is all important from the standpoint of the results of treatment, and urgent is the call for its detection at a stage, when the condition is still within reach of arrest. Yet it is a notable, almost notorious fact, that the diagnosis is too seldom made in the incipient stage and the majority of patients admitted to sanatoria or sent to distant health resorts are not incipient or favorable cases as classified by the National Association or the Turban scale, but moderately advanced and advanced cases, second and third staggers, whose prospects for an arrest of their disease, and restoration to a working capacity are greatly diminished by serious constitutional inroads because the diagnosis of the incipient condition had been overlooked or unheeded and valuable time lost before systematic treatment had been instituted.

When this disease, which is responsible for nearly 7,000 annual deaths in Ohio, has reached the stage which justifies the use of the term "Consumption," its discovery, which can then be made by a layman, makes no demand on our diagnostic skill, and offers little assistance to our therapeutic efforts. The physician who seeks to be of service to his patient, knows that his results, save in the acute pneumonic type of cases, will be in direct proportion to the earliness of his diagnosis, and if it is not an early diagnosis, the rest cure, sanatorium care and treatment, a change of climate, the customary, archaic, "Colorado, New Mexico, Arizona," advice, will be of little avail or benefit to the patient.

Failure to diagnose the disease early is the factor which tends more than any other to defeat the cure of tuberculosis, and this same factor, by allowing the disease to extend and reach the open stage before it is recognized, needlessly exposes count-

\* Read before the Stark County Medical Society at Canton, May 18, 1915.



less numbers to the dangers of infection—new victims for future sacrifice. No results will be obtained until the disease is universally recognized early, instead of late, as it is today. Pottinger states: "The tendency which has crept into, and prevails in, medical practice to treat symptoms without making a diagnosis has in a large measure been responsible for this condition."

In 1906 Barnes showed that 46 per cent of consumptives in Rhode Island had been incorrectly diagnosed by their family physicians, with a resulting delay in diagnosis averaging 11.3 months. In 1908 Stoll showed that 44 per cent of consumptives in Connecticut had been incorrectly diagnosed. In 1911 Dearholt showed that 42 per cent of consumptives in Wisconsin had not been given a correct diagnosis by the first physician consulted. In 1911 Hawes showed that 57 per cent of consumptives in Massachusetts had not been given a correct diagnosis. Our sanatorium records covering 1,500 cases show delayed diagnosis averaging from 9 to 10 months from the onset of the first symptoms.

In view of these facts it would be well for every physician in general practice to reflect occasionally whether he has unrecognized tuberculosis among his patients, and also to remember that while tuberculosis is less frequently seen than some other diseases, it is nevertheless more frequently fatal when neglected than any other met with in his practice. Sir Wm. Osler has said that the family physician is the most important factor in the eradication and control of tuberculosis, since he is the first to be consulted when illness arises. Procrastination and delay of treatment on the part of the patient with a timely diagnosis, we realize is occasionally a factor. From our history records, we do not conclude, however, that this delay is by any means always the fault of the patient, and in those cases where delayed diagnosis is the cause, the physician in a large measure is culpable.

Crane, of the Massachusetts State Sanatorium (Rutland), in a recent article says, "The profession in this state has improved in ability to diagnose early tuberculosis, since the establishment of public sanatoria, albeit errors in diagnosis and delays in diagnosis are still rampant." But he further states that, "those who have berated the general practitioner in season and out of season for his dereliction have been too optimistic about the ease of acquiring the necessary skill to detect early tuberculosis, forgetting that they themselves spent months, and more usually years,

in intimate contact with the disease before they unlearned the misconceptions they had previously acquired and before they considered themselves dependable to make an early diagnosis," and Reviere concludes that, "The skill required for early diagnosis of tubercle is unfortunately difficult and laborious to acquire, and no short cut to it does, or ever can, exist—the path of experience must be truly trod."

The physician who makes a diagnosis of early pulmonary tuberculosis is assuming responsibility. To stamp a person as actively tuberculous is a grave matter; to advise such a person to give up his work, and to leave his home and family, if home conditions are unsuitable and unsatisfactory for treatment, and to go to a sanatorium, or a distant health resort, is a serious matter; while on the other hand, failure to recognize and treat tuberculosis in the early and curable stage is almost criminal. The physician always bears in mind the distinction between tuberculous infection and tuberculous disease and that the former at any time may, and often does become the latter. Baldwin believes that most adult tuberculosis is not due to a new infection or reinfection, but due to a lighting up of the disease from the spread of autogenous superinfection brought about by extraneous conditions of environment, and hold that childhood is the time of infection, youth the time of superinfection and that, from extension of the primary disease. In other words, natural or acquired immunity may hold an infection dormant, may heal an active lesion in its incipency, or localize it in the glands or bones or it may result subsequently in miliary, meningeal or pulmonary involvement. It may be stated as a fact that tuberculosis is now regarded as a common infection of childhood. Some recent writers go so far as to contend that the primary infection, as a rule, occurs under the eighth year of life. Lanstein regards the first and second years of life as the periods of greatest susceptibility and declares that at that time children are many times more susceptible than adults. Infection may occur through the mucous membrane of the gastro-intestinal or respiratory tract, and whether or not it spreads from the lymphatic system, which is the site of primary infection, and develops pulmonary tuberculosis subsequently, depends largely on the child's vitality and resisting powers. Numerous authorities hold that the bacillus acquired in childhood may remain dormant in the body, developing tuberculous disease at any time that the general resistance is lowered, and this without additional infection.



Francine believes that, "During childhood and early adolescence this early tuberculous infection may manifest itself not at all or only in anemia, underdevelopment, general physical delicacy, etc. These children react to tuberculin and often have enlarged lymphatic glands, but there is no way in the majority of instances of telling that they are tuberculous, but this is quite sufficient for the diagnosis which is to be understood to mean that the moment that a child reacts to tuberculin it is evidence that it has been sensitized by the tubercle bacillus and that the moment a child is thus tubercularized it becomes potentially, at least, a future case of pulmonary tuberculosis." This is recognized in modern veterinary practice. Animals which react to tuberculin are regarded as potential cases, and though showing no symptoms or signs of activity, are condemned. Not only does the general trend of modern opinion bear out this view in relation to time of infection, but there are also many clinical and pathological statistical data to confirm it.

The symptom group or complex, which we were taught as indicating early tuberculosis is now interpreted as meaning in a large measure advanced, well nigh hopeless, tuberculosis and some of us still adhere to the old teachings and traditions of "consumption" with high temperature, emaciation, hectic flush, profuse expectoration, and night sweats. Our early and favorable cases present none of these symptoms.

There is probably no disease whose onset is so insidious. Morton, 200 years ago, said, "There is no malady which assumes so many protean forms and which is attended by such diversified symptoms and complications." Lennec, in an old treatise (Forbes translation), says of latent or incipient phthisis, "It very seldom happens that phthisis is latent throughout its whole course; but it is by no means rare to meet with cases in which the characteristic symptoms show tuberculosis only a few weeks or even days before death; and which have previously been mistaken for disease of quite a different nature."

The incipency of the disease is oftentimes manifested in a long train of vague symptoms, sometimes extending over many years; while only occasionally does it strike violently at the apparently healthy individual with the sudden manifestations of an acute infection.

Von Ruck says, "In pulmonary tuberculosis, as in many other diseases, the patient's symptoms often give important hints

in diagnosis and prognosis. A painstaking consideration of the symptoms with a view of accounting for their presence and origin, either by the evidence elicited by physical examination or by the co-existence of complications will often lead to discoveries which more or less modify opinion in the various aspects of a given case. My experience with cases of tuberculosis coming under my care has been such that I have reason to believe that such a study has been frequently omitted, and that the examination by previous medical advisers have been more or less incomplete. Indeed, it appears that quite often many things are taken for granted and particularly so when the symptoms are those commonly observed in pulmonary tuberculosis."

And Pottenger insists that, "If a careful clinical history of all patients who are suffering from the early symptoms of tuberculosis were taken, the disease would be suspected in almost all; for in nearly every instance there is a history of one or more of the following symptoms: Malaise, loss of strength and endurance, altered appetite, decline in weight, increasing nervousness, vague pains throughout the chest, especially aching between the shoulder blades, acute pleural pains, a slight tendency to cough or to become short of breath on exertion, repeated colds or the spitting of blood. If the physician were to systematically record the symptoms which he finds in these cases, he would almost invariably have his attention directed to the chest. If added to these symptoms, he should find a slight rise in temperature and a pulse easily affected by exertion, it would be his duty to rule out tuberculosis before any other diagnosis were made; so, I would say the first and most important point in the diagnosis of tuberculosis is to know when to suspect it."

The frequency with which tuberculosis is mistaken for other conditions should be borne in mind, and have our constant consideration, for there certainly is no condition in which a detailed, painstaking history of more real value in diagnosis. Chronic influenza, bronchitis, an ordinary localized bronchitis, lung abscess, unresolved pneumonia will often closely simulate tuberculosis, and we, of course, realize that it is possible for a person to lose weight and strength, become weak and anemic, even develop a cough and run a temperature without these being due to tuberculosis. However, it seems to me that this should be a rather conservative statement. We must give due weight to fever and rapid pulse, to unexplained loss of body weight, strength and



energy, to undue fatigue and ease of tire. We see many patients in whose lungs little or nothing is found on physical examination, but who constitutionally show clear and definite evidence of tuberculous disease, proved by the subsequent course of events. In these cases, those who depend alone upon the physical findings and the sputum report will not make a timely, much less a brilliant diagnosis. It should be generally recognized that the tubercle bacillus is rarely found in the sputum of the incipient cases and that the family history is of no more importance as a precursor than such predisposing factors as overwork, worry, the acute infections, puberty, pregnancy, alcoholism, and the adversities of poverty and bad environment.

How many tragedies are caused by the hyperconservative attitude on the part of some of us in awaiting a positive sputum? The physician and patient are lulled into a false security on receipt of a postal card from no less an authority than the State Board of Health, bearing the words "Sputum Negative" or "Tubercle Bacilli Absent" and the physician reassuring the patient has persuaded himself that a careful stripped chest examination and a detailed history record and closer observation of the patient is unnecessary because of the negative sputum report. This, calamitous as it is, comes to us too often in the histories of tuberculous patients who, when finally diagnosed or after they have made their own diagnosis and are accepted for treatment, are the usual stereotyped moderately advanced, second staggers. The organism does not appear in the sputum until after caseation and softening of a tuberculous deposit situated near the bronchus into which tuberculous material finds its way by necrosis of intervening tissue. The closed period may extend over months.

We must not disregard the fact that hemorrhage from the mouth almost always means pulmonary tuberculosis and we should never be guilty of that vague statement that the blood comes from the nose, throat or stomach unless we have positive evidence. Minor says, "Hemorrhage from any cause, except tuberculosis, is so rare that it is astonishing to see how diligently some physicians seek to explain it as coming from any other possible cause, a practice that has been disastrous to many patients." Reviere states that in most cases of initial haemoptysis it is already possible to demonstrate lung changes. The value of well marked haemoptysis, he feels, is so great as to make the symptom pathognomonic. So-called idiopathic pleuri-

sies have proved to be tuberculous, and not only is pleurisy of tuberculous causation, but is followed in a large majority of cases by pulmonary disease. The relationship of pleurisy and phthisis is well brought out by the investigations of Allard and Koester. Among several hundred cases of pleurisy 48 per cent with effusion developed pulmonary tuberculosis and 42 per cent with dry pleurisy subsequently developed lung disease. In most of these cases pulmonary tuberculosis developed within five years. The nervous manifestations of early tuberculosis should receive careful attention. It is recognized by students of tuberculous disease that the majority of patients are usually more or less neurasthenic. Recently an author has indicated that many of these cases diagnosed neurasthenia will show active tuberculous infection on more careful examination.

Gastric disturbances are often the first symptom; anorexia, so-called indigestion, nausea, vomiting, etc. Marked anorexia, a real *crux medicorum*, is often an early symptom, and precedes the characteristic signs of the disease, and the patient is often apt to regard his whole trouble as a gastric disorder. The physician may likewise not escape this error. Now and again there occurs a hoarseness, perhaps not very marked, but extremely obstinate, which appears at a stage prior to any other pulmonary symptom. This prodromal hoarseness which has been especially emphasized by Schaffer and Leberman may cause the patient to consult a physician and as a diagnostic sign is worthy of close observation. We must remember that exophthalmic goitre may closely resemble incipient phthisis. The distinction between the two conditions may be very hard to make. Absence of definite lung signs along with a rapid pulse, tremor, slight thyroid enlargement or exophthalmos will usually clear up the diagnosis. However, Saathoof and Mobus declare that the symptom complex of Graves' disease accompanied by fever should be looked upon as a suspicious tubercular infection. Frequently, especially in young girls, pulmonary tuberculosis in the earlier stage gives the picture of chlorosis. Butler labels it "pre-tuberculous chlorosis"; or pseudo-chlorosis; lack of energy, a feeling of tiredness, or languor, increase in the rapidity of the pulse and respiration and digestive disturbances are prominent symptoms, even emaciation may occur in chlorosis, although an increase in the fatty tissue is more frequent; temperature affords no positive differential criterion. While chlorosis usually runs an afebrile



course, Von Norden states that eighty cases in his series carried temperature while on the other hand early tuberculosis is often afebrile. Here again a careful history is of great assistance and importance inasmuch as it establishes a possibility of an infection. The most important differential point as Von Norden has recently brought out is the result of the injection of tuberculin. He states, "that if there is no reaction, tuberculosis can be excluded with an approach to certainty." Klebs says, "chlorosis" is so often accompanied by slight fever and so often precedes tuberculosis that the view of some that it is really a tuberculous condition seems reasonable and the use of the tuberculin test justified. Pottenger says, "Those who have not had special training and those who do not have an opportunity for constant careful examination of chests, percussion, and auscultation, are unreliable and furnish little if any information that can be relied upon, and adds that his statement is not made in a pessimistic vein, nor is it made to discourage physical examinations, but rather to emphasize the necessity of training in auscultation and percussion. Hawes states that he does not believe that the administration of tuberculin ought to play any part among general practitioners as a diagnostic procedure, likewise the X-ray, except in the case of children, and further quoting him, "I would emphasize the fact that it is the careful study of the patient, his history, and that of his family, his occupation, habits, surroundings, his constitutional signs and symptoms, which will lead us to a correct diagnosis, and that were the stethoscope used less (agreeing with Pottenger) and the thermometer and common sense used more, we should not make so many mistakes." Mistakes due to lack of time and consideration will be overcome when we resolve to study each case thoroughly with the use of all ordinary methods of examination and the available accessories to medical practice. Thorough study of the history and thorough physical examination of each individual case is the most important and should precede the application of any test. The writer feels, that tuberculin as well as the X-ray as diagnostic measures are of considerable value to the practitioner who will take the trouble to use and interpret them intelligently. Opposition and reluctance to employ tuberculin has steadily passed away and it may now be stated that no one is making any considerable number of early diagnoses without it. The conjunctival (Calmette) test has been abandoned as unsatisfactory and distinctively un-

safe. The Moro test is not used now as formerly and its employment is confined to very young children. In most cases where the Moro test was once used the Von Pirquet scarification now has preference. In infants, the Von Pirquet may be regarded as diagnostic, but it has little significance after the first few years of life. A positive cutaneous tuberculin reaction in adults indicates existence of a tuberculous process somewhere in the body, but it does not indicate that the process is active. Negative cutaneous tuberculin reaction is one of the corroborative evidences of absence of tuberculosis, unless reaction is prevented by far advanced disease or tolerance to tuberculin established by tuberculin treatment. As Haman and Wolman tersely put it, failure to react proclaims one of three conditions, freedom from tubercular disease, a healed focus, or a body overwhelmed with infection.

The subcutaneous test should be employed only after all other available measures of diagnosis are exhausted, but when carefully and intelligently applied it gives valuable information, for a negative result furnishes strong evidence against the presence of active disease. While a positive result is of less value and is open to other interpretation. If the patient should react promptly to the first small dose, sensitiveness is high, and there is evidence of active disease. That a reaction denotes infection is not disputed. The difficulty forms around the question whether and if so, how far, it decides the activity of the disease whose presence it indicates.

It is not within the scope of this paper to go further into detail in the points touched upon, but in conclusion, if we have in a measure brought out and impressed certain facts which may lead to a more careful examination, i. e., to a detailed history, to a careful study and analysis of the case, which is of far greater importance than is often thought, and if we shall take nothing for granted before we have at least attempted to the best of our ability to trace objective signs and subjective symptoms to their pathological source, then and then only, shall we err less in our diagnosis of the incipency of the Great White Plague.

#### Bibliography

- Journal American Medical Association*, February 16, 1907.
- Yale Medical Journal*, March, 1909.
- Wisconsin Medical Journal*, July, 1911.
- Boston Medical and Surgical Journal*, February, 1912.
- Boston Medical and Surgical Journal*, February, 1915.
- Boston Medical and Surgical Journal*, March, 1915.
- Francine, "Underlying Factors in the Spread of Tuberculosis."



# A COMPOSITE REPORT OF THE THREE MONTHS' SERVICE OF THE LAKESIDE UNIT AT THE AMERICAN AMBULANCE

## INTRODUCTION

By G. W. CRILE, M. D.

Some time ago the American Ambulance at Neuilly, a suburb of Paris, conceived the idea of having the different American Universities take part in its work. To this end Doctor Joseph H. Blake wrote in behalf of the Medical Board of the Ambulance that they realized that if some of the large American Universities were represented there a double purpose would be served; first, the various cities in which the Universities are located would acquire a personal interest in the American Ambulance, and, second, the first-hand knowledge of military surgery thus secured would be very important should the necessity for such knowledge arise in our own country.

As it happened, Doctor Blake asked us to secure the interest of the other universities in this movement. As a result of our correspondence, Harvard, Pennsylvania and Chicago Universities decided to avail themselves of this opportunity.

I want to emphasize the fact that it was intended that this service should be absolutely neutral, just as medicine, surgery and science are all neutral, whatever may be the personal opinions of those engaged in their pursuit.

In forming University units, Western Reserve University through Lakeside Hospital was given the first service. When we arrived we found that the management of the American Ambulance had generously given us the entire third floor, including small wards for our service of 150 beds, a large, beautifully lighted operating room and a laboratory.

Now, I would like to say a word about the American Ambulance itself. I think we have all gained the idea from our contact with the American Ambulance that it is managed extremely well by the group of Americans who mobilized their forces there. So far as I could judge, from my own observations, and from opinions expressed by such able critics as Sir Berkeley Moynihan, Sir Almroth Wright, Sir Watson Cheyne, Professor Tuffier, Doctor Carrel, and many others, there is no other hospital in either the French or English service so well organized as is the American Ambulance. Of course, I know nothing of the German hospitals.

\*These reports were read at the meeting of the Lakeside Unit, Lakeside Hospital, April 21, 1915.

As for our Lakeside Unit, we worked under the same organization as at home. Our service might justly be described as a branch of the Lakeside Hospital operating in Paris.

This organization was financed by Samuel Mather, Esq., except for the expenses of Doctor Lower and myself. There were others very willing to help, but Mr. Mather wished to take the responsibility himself. H. M. Hanna, Esq., made a generous contribution, which was used for the research work.

The Unit is under obligation to Doctor Warner, Miss Samuels and Mrs. Oxley, whose untiring aid was indispensable in caring for the many necessary details in the preparation for the trip. Our work was facilitated and expenses reduced by the generosity of the Ohio Chemical Company, who donated one of the gas machines, and the American Express Company, who paid for the transportation of the gas to the pier in New York. A like generous spirit was manifested everywhere on our route from Cleveland to Paris, no less in England and in France than here at home.

In mentioning here the untiring work of every member of the Unit, I must pay tribute also to the "Home Guard," whom we left behind. With four resident surgeons and two anesthesiologists gone, work had to go on, and when I returned I found that this group of surgeons, nurses and doctors had carried on their work in a magnificent way.

One member of our party, Miss Hodgins, has not returned, but is playing the role of a real soldier in remaining in France against her desire to return home in order to instruct others in the administration of nitrous oxid anesthesia. We found that this anesthetic was of great value, and, as we all know, it can be administered only by those who have received expert instruction in its use.

## THE PERSONNEL OF THE AMERICAN AMBULANCE

By MISS AMY ROWLAND

The beautiful building of the American Ambulance was designed for a boys' high school. Just before its completion war was declared and a group of Americans, many of them already connected with the American Hospital at Neuilly, under the leadership of Ambassador Herrick, secured the use of this building for the "Section for the Wounded" of the American Hospital.



Within its walls there have gathered remarkable groups of individuals, representing many walks in life and many countries, all activated by one common purpose, to render what aid each can to those who need their care. None are there for the sake of sentiment or of glory, but whether as ambulance driver, orderly, nurse or page, each is working diligently and efficiently and willingly submitting to authority.

The ambulance drivers are for the most part from American universities, with others from English and Canadian universities—hunters, polo players, soldiers of fortune.

Among the professional nurses sixty-three hospitals and thirteen nationalities have been represented, and English women and Americans, as well as French women, are found among the auxiliary nurses. The professional nurses have charge of the departments and wards and are assisted by the auxiliary nurses, who work cheerfully during the long and regular hours required of them. Some have been constantly on duty since the Ambulance opened and have become very efficient. Among them have been actresses, authors, artists and social leaders.

In England, Belgium, Germany and France the organization of the Boy Scouts has proved its value. In Paris their uniforms are almost as frequently seen as the blue and red of the French soldier. The Ambulance boy scouts and other lads cheerfully serve as errand boys and pages.

The orderlies were all volunteers, also. They represented a number of nationalities and over thirty occupations, salesmen, bankers, mechanics, artists, students, opera singers.

By their varied talents the nurses and orderlies were able to contribute not a little to the pleasure of the patients and their fellow workers. Many a patient or worker has taken away as a souvenir a drawing by one of the artist orderlies or nurses, and the memory of impromptu recitals in the darkened chapel where singers, violinists and pianists performed for an audience which for its cosmopolitan character, its picturesqueness and its appreciation could never be equalled.

In the early days of the Ambulance some German wounded were cared for there, but none were there during our stay. Most of the patients were Frenchmen, of course, but there were a few Englishmen, many Turcos and a few full-blooded negroes from the Congo.

Not only the patients and those who cared for them, but the visitors also, contributed much to the interest and picturesqueness of the Ambulance life. French officers in full uniform; Zouaves in the old brilliantly picturesque but too conspicuous uniform, and in the new uniform of the same fashion but made entirely of khaki; the relatives and friends of patients of all ages, men and women, some richly attired, some in heavy crepe, some of peasant type. Among them was one old woman who, when she could not be admitted to her son's bedside, sat all day long in the entrance hall at brief intervals eagerly repeating her inquiries for his welfare. So, she told us, her mother, in the War of 1870, had watched and waited at the bedside of her son, this woman's brother.

From some of the visitors to the Lakeside Unit in particular we gained much first-hand information regarding the Belgian situation. Among the Belgian visitors was Professor Laurens, of the University of Brussels, whose whole appearance, sadly altered and aged since he was in America two years ago, told more graphically than words of the strain which he and his people had undergone. A contingent of the Japanese Red Cross, Sir Berkeley Moynihan, Professor Alexis Carrel, Doctor Tuffier, Sir Almroth Wright and other French and English surgeons visited the Ambulance and the clinics while the Lakeside Unit was in service.

In closing, I want to express my appreciation of my privilege in being thus associated with the Lakeside Unit, regarding whose contribution to the personnel of the American Ambulance I heard many favorable comments from orderlies, nurses, officers and patients.

## NITROUS OXID ANESTHESIA

By MISS MABEL L. LITTLETON

We were very much surprised to find how the administration of nitrous oxid to the French soldiers differed from its administration in our own clinic. The reason for this was that their military training, their mode of life, their constant use of alcoholic beverages and of tobacco, their very nervous and excitable temperament and the intense strain of this war, together resulted in their resisting the anesthetic more than do the patients in our clinics here.

A great many of our soldier-patients had been previously anesthetized with ether. These cases anticipated another dis-



agreeable time and as a result were much frightened and very nervous. We were also handicapped by our lack of knowledge of the language, because of which it was necessary to have an interpreter.

The first stage of anesthesia was about one-half as long as in an ordinary case (about one and one-half minutes), that is, the soldiers went right to sleep without any trouble.

The second stage, on the other hand, lasted about twice as long as in our cases here. During this stage the soldiers had realistic dreams, in which they lived over again their recent battles; they thought they were fighting or charging; they talked and struggled so that they had to be held forcibly. In some cases in order to get control of the patient it was necessary to mix a little ether with the nitrous oxid and oxygen for about five minutes.

After the second stage the patients slept very peacefully, were easily controlled and took a very small amount of the anesthetic.

After stopping the anesthetic our cases here wake up gradually and are very calm and quiet. It was not so with the French soldiers. They woke up immediately, laughing, talking and shaking hands, were usually very happy and told of their dreams, which were very realistic. They told how they had relived their battles in these dreams, had played games or gambled with their comrades. Usually their dreams were pleasant. While under anesthesia one soldier sang "The Marseillaise" from beginning to end in very clear and distinct tones, continuing for about five minutes. When he woke he remembered it and said he always liked to sing. A great many felt so well that they wanted to walk back to the wards rather than to be carried. The first request of each was for a cigarette.

Practically no nausea followed the anesthesia, but all the cases were anxious to eat and were very proud of the fact that they could do so, especially those who had experienced the after-effects of ether anesthesia.

Nitrous oxid and oxygen was a blessing to patients in extreme shock and to those who were very ill. There was practically no pneumonia on our service.

The soldiers who had taken the nitrous oxid oxygen recommended it highly to their fellows, and the French and English

surgeons who visited us were enthusiastic and very anxious to use it in their own clinics. They are using it now on all the services at the American Ambulance.

Doctor Harley, a French doctor, who was at the front doing field duty, was released by the government at the request of Doctor Du Bouchet and was sent to the Ambulance to learn how to administer nitrous oxid oxygen. Sir Berkeley Moynihan sent two nurses from his clinic in England to receive instruction from Miss Hodgins. We may fairly say, therefore, that the Lakeside Unit has proved that nitrous oxid oxygen anesthesia is a great boon to the wounded soldier.

### FROST BITE

By LYMAN F. HUFFMAN, M. D.

The subject of frost bite is not altogether new in military surgery, as reference to the *Memoirs de Chirurgie Militaire* of Larrey, surgeon-in-chief of Napoleon's Imperial Guard, will show Larrey observed that the majority of cases of frost bite occurred *after* the termination of a period of very cold weather when the mercury was rising. However, there is no doubt that frost bite has been more prevalent in this war than in any other, because the conditions of trench warfare are obviously conducive to its production. The prevalence of this condition is illustrated by a recent report from the American Hospital at Paignton, England, which gives the following statistics:

Number of gunshot wounds.....	226
Number of shrapnel and shell wounds.....	203
Number of fractures.....	115
Number of frost bites.....	153

One-sixteenth of the cases admitted to the Lakeside service at the American Ambulance were frost bites.

This subject is receiving a great deal of attention in British medical periodicals. One of the best articles on frost bite is by C. Gordon Watson and Chas. S. Myers, in the *British Medical Journal* of March 6, 1915. In the series of cases studied by these observers the skin was unbroken in 89 per cent; blisters or ulcers were present in 9 per cent, and there was gangrene in the remaining 2 per cent.

The principal etiological factors in the production of frost bite are cold, moisture and interference with the blood supply to the affected part. The report of a commission of the French Academy of Medicine, February 2, 1915, emphasizes the impor-



tance of tight shoes and constricting clothing as an etiological factor. The cold need not necessarily be severe, as the accounts of our patients would indicate that very rarely was there any ice in the water in the trenches.

The afflicted individual first notices a numbness or tingling in the affected extremity. In about 24 hours it becomes swollen and so painful that walking may be impossible. The pain is described as sharp, cutting or burning. It may persist for months and necessitate the patient's hobbling about on his heels because of tender toes, which may be persistently painful long after they appear to have returned to a normal condition.

Under our observation we usually found the proximal portion of the foot red, hot and swollen. The toes are frequently cold to touch and were cyanotic and anesthetic. Excessive sweating of several of the toes was sometimes noted. Rarely there are blisters which break down and give place to slowly healing ulcers. More rarely still we see actual gangrene. The gangrene is superficial except in the most severe cases, and so the color modified by the living tissue underneath is a very dark purple instead of the dead, black, dry gangrene seen under other conditions. At the line of demarcation of the gangrenous area is a deep red zone of reacting tissue, which gradually shades off to the normal appearing tissue above.

The pain which these patients suffer is sharp, cutting or burning and is paroxysmal. It is a true neurotic pain apparently and may be as severe in the mild cases as in a fully developed case with gangrene.

As to treatment, we endeavored to keep the feet cool and dry, and with this in view applied stearate of zinc powder several times a day and kept the parts exposed to the air. When gangrene had developed the treatment was quite conservative. The gangrene is usually superficial and so sloughing of the external parts is frequently observed. Amputation is rarely necessary.

## **TETANUS AND GAS GANGRENE**

By EDWARD F. KIEGER, M. D.

Tetanus and gas gangrene have been relatively rare conditions among the wounded admitted to the American Ambulance at Paris. Out of twelve hundred cases admitted up to the first of March there were four cases of tetanus and seven cases of gas gangrene. This is a strikingly small number when we con-

sider the circumstances favoring the inoculation and growth of the anaerobic organisms, bacillus tetanus and bacillus perfringens, namely: (1) The trench warfare in tilled soil; (2) The nature of the wounds—deep and penetrating, and often with marked maceration of tissues; (3) The fact that at the beginning of the war many wounded soldiers were carried to the hospital in trains that had been used previously for transportation of horses and cavalry equipment.

The number of tetanus cases has been small, owing to the present successful management of antitetanic serum administration, although at the beginning of the war this was not so well marked, due to the very limited available supply of the serum at that time and the difficulty encountered in sending it where it was most needed. Thus many wounded were obliged to go without a preventative inoculation of the serum. This no doubt accounts for the fact that the four cases of tetanus seen at the Ambulance came during the first six weeks of the war. Since this time not a case has been seen.

After a soldier has been wounded he is given an injection of serum either on the field, at the field hospital, or at the base hospital to which he is assigned. Usually but a few hours elapse between the time of injury and the injection of antitetanic serum. At the present time it is rare to see a wounded soldier admitted to the hospital who has not had this injection. Unless a wounded man upon admission to the hospital has a tag stating when and where he received his injection, with the name of the doctor administering it, the injection is given at the hospital, even though the soldier may assert that the injection had been given a day or two before. Soldiers suffering from frost bite are also given the antitetanic serum. One case of frost bite did not receive serum and tetanus and death resulted. At the autopsy it was found that the only portal of entry for infection was a very small abrasion of the skin on the dorsum of one of the frost-bitten feet. Of the four cases of tetanus received at the Ambulance, only one recovered; this patient was treated with intraspinal injection of magnesium sulphate.

I believe that gas gangrene presents the most trying of the many perplexing problems confronting present-day war surgery. Similar conditions were described during the Franco-Prussina and Civil Wars, but only during the present war has gas gangrene been looked upon as a definite clinical entity; the causative



factor being the anaerobic gas-producing bacillus of Welch or the bacillus perfringens. This organism has been grown from many wounds, but gangrene developed in only a few selected cases in which there was (1) necrosis of tissue and (2) injury to a large vessel wall. Gas gangrene usually develops five or six days after injury. Let us follow the course of a case, for example, of a patient with a perforating rifle ball wound in the upper arm. There is at first a little redness and swelling about the wound, with a bloody discharge. A marked edema of the entire arm then develops, the hands and fingers become puffy and swollen and palpation gives one the sense of fluctuation. There is a bubbling, foul-smelling and dark brown discharge from the wounds and deep-seated crepitus. The infection spreads along deep tissues and dissects the muscles away from bony structures. There may be a brownish mottling of the skin and small blebs form, cultures from which show bacilli perfringens. Finally the arm becomes purplish in color, severe toxemia develops and death ensues; marked anemia due to the disintegration of blood is a striking feature of the early course of this disease. Autopsies on these cases have shown (1) *Local changes*: gangrene of part, the tissues having a cooked-necrotic appearance; much gas throughout the tissues; muscles dissected away from the bone; blood-vessels markedly congested; bacilli perfringens abundant. (2) *General changes*: bacteraemia; bacilli perfringens and gas bubbles found in liver, spleen, pancreas, kidneys, brain and spinal cord.

Many methods of treatment have been used to prevent gangrene by securing the best possible aerobic conditions of the diseased areas as follows: (1) Multiple incision and drainage. (2) Irrigation with peroxide. (3) Subcutaneous injection of oxygen. (4) Amputation. (5) Vaccines. All these methods have proved of but little avail.

Doctor Weinberg, of the Pasteur Institute, who probably has been the chief investigator working on this problem, prepared a serum by inoculating horses with cultures of bacilli perfringens; the technic being similar to that used in the preparation of anti-diphtheritic serum. We were fortunate in seeing this serum first used on one of our cases with a wound on his upper right arm, who presented a typical picture of severe gas gangrene. The first day  $\frac{1}{2}$  to 1 c.c. of the serum was injected into the vein of the left arm. Within a few minutes the patient had a severe anaphylactic reaction.

That afternoon  $7\frac{1}{2}$  c.c. of serum were injected and the patient again reacted, but not so severely as before. During the following days the serum was also injected about the wound in 20 c.c. doses. Two days following the first serum injection the patient showed marked improvement; the temperature dropped, and the swelling was lessened. One week later the temperature was normal, there was but slight swelling of the arm, the discharge was less profuse and less foul and the general condition was markedly improved. This is the only case in which I have seen the serum used, but I am strongly convinced from the results in this one case that Doctor Weinberg has a remedy which will prove of the greatest value in the future treatment of gas infection.

### FRENCH FIELD SERVICE

By LEROY B. SHERRY, M. D.

In planning for this meeting it was thought that a brief review of the Field Service of the French Army might be of interest, but in attempting to present this subject it might be well to confess at the outset that the majority of what will be said is second-hand information, and consequently may not be absolutely accurate in all minor details.

As you are well aware, every army has as an integral part, an Army Medical Corps, whose chief aim is the speedy and at the same time efficient care and transportation of the wounded. The organization in one country may differ from that of another in minor details, but the essentials are the same.

Every French soldier, along with his uniform, rifle and knapsack carries, as part of his equipment, a small packet about four inches in length by three inches in width and one-half to one-fourth of an inch in thickness, which contains a bandage, folded and not rolled, a piece of gauze; a piece of cotton and a small vial of tincture of iodine.

When a man is wounded in the trenches, immediately either he himself or one of his comrades applies this dressing to his wound. Now, if he is in the first or second line of trenches and is wounded in the morning or during the daylight, he usually stays there until night, when under cover of darkness he and the other wounded men are removed by the stretcher-bearers to the first aid station or *Poste de Secours*. This is usually placed in



some house or barn or tent or other spot within the firing line, usually from about a kilometer to a kilometer and a half behind the trenches.

Purely first aid treatment is given at this place, such as the application of antiseptics and bandages. From the *Poste de Secours* the wounded are removed as soon as possible to the next station, which is called the Ambulance. This station also lies within the firing line and usually from six to eight kilometers behind the *Poste de Secours*. Here dressings and absolutely essential operations are performed and those cases that cannot be moved are made as comfortable as possible while the less severely wounded are sent on in any type of conveyance that is available to the next point—the first Evacuation Station. The Evacuation Station is a railroad center where the station is used as a hospital. Very little in the way of dressings is attempted here, the cases being simply sorted, those that are very serious being sent to hospitals in the immediate vicinity while the others are loaded onto hospital trains and sent on again either to a second Evacuation Station, which is of the same character as the first, only differing in the fact that it is usually larger and fed from a larger territory; or they are sent on to what is known as a “center,” of which Paris is an example.

Digressing a little, it may be of interest to state that the soldiers either at the Evacuation Station, or on the hospital train, are sorted and classified as to whether they are sick or wounded, and those who are sick have marked on the back of their coats an “M,” standing for “*Malade*” or “sick,” and those who are wounded are marked with a “B,” meaning “*Blessé*” or wounded. This is simply to facilitate prompt distribution when they reach their destination.

Naturally every wounded man does not pass through all of these stations, for he may be taken immediately from the Ambulance or even the *Poste de Secours* to some hospital in the immediate vicinity; but practically every man who enters a base hospital passes through a *Poste de Secours*, an Ambulance and one Evacuation Station.

And so the wounded men reach the base hospitals. They are a conglomerate “crew,” dirty and tired looking, wearing a varied assortment of clothes and usually carrying all their possessions in a knapsack. The uniform of the French private soldier is at best not a handsome affair, but when you take a

dirty red cap and muddy blue coat and add to this a pair of dirty overalls or corduroy trousers, or even the official red pants which show marked signs of wear, and put into these a dirty, unshaven man, usually with some part of his body swathed in an enormous bandage, you will have some idea of the appearance of the French soldiers as we first saw them enter the American Ambulance.

Every wound, however superficial or apparently insignificant, is found covered by a huge dressing. Small, penetrating wounds of the skin of the scalp, superficial abrasions of the skin of the face or the body, frozen feet, as well as penetrating and perforating wounds all receive the same care and attention.

The completeness of the French field dressing never ceased to interest us. The outer covering is a three to four-inch brown linen bandage, which they say is made from the bed-sheets of some of the good housewives along the line; underneath this is a pad, usually from eight to ten inches in width and at times from a yard to a yard and a half in length, which is wound round and round the wounded part. Under this pad may or may not be a mass of cotton, and under the cotton and next to the wound and for a wide area around it is found a great quantity of gauze, and the wound itself may be found widely incised with a large rubber drain in place.

Many objections, of course, can be raised to such a dressing, but I believe they are all offset by the fact that these men are at times from two to three days on the road without a dressing and traveling not in first-class coaches as a rule, but in any type of conveyance, such as hay-wagons, motor ambulances or cattle cars, even.

Wounds of the arms or legs complicated with fractures and penetrating and perforating wounds of the hand, elbow, knees and foot were all found to be encased in a well-padded tin or wire splint, or if these had not been available, some makeshift had been used, such as one very efficient splint which we found on a Pott's fracture made from two pieces of half-inch wood and a piece of cardboard.

Another splint that was very interesting was one which was removed from a man who had a perforating wound of the right upper arm, complicated with fracture of the upper one-third of the humerus. In this case the wound of exit lay just below the axilla on the inner surface of the arm. The splint was made of tin with a base shaped to conform to the chest wall. From this



base ran an upright piece which supported a trough in which the bandaged arm lay, thereby leaving the wound in the axilla free from pressure.

We saw splints of all shapes and kinds—some molded to the part injured, others reinforced with steel or wood, and still others bridged with wire and so constructed that the wounded part was left free so that dressings could be easily applied. But all splints of whatever kind were well padded and at times showed great ingenuity on the part of the inventor.

We all marvelled at the completeness of the dressings and care which the wounded received, but when we stop to consider that the flower of the medical profession of France is at present at the front, meaning by the front not miles back from but *within the firing line*, which is attested by the fact that up to February, 1915, ten hundred and twenty-three medical officers were reported killed, we can see why such good results are obtained.

The other armies in the field are no doubt caring for their men in much the same manner and with the same efficiency, but I think we all returned with a wholesome respect for the French Army Medical Corps and a feeling that peasant and business man, private as well as officer is receiving the best that medical science affords.

## FRACTURES

By SAMUEL L. LEDBETTER, JR., M. D.

Our three months' service in the Ambulance of the American Hospital of Paris gave us an unusual opportunity for the study of fractures, particularly of badly infected, compound fragmented types.

The cases came to us usually from two to five days after injury, though in a few instances a considerably longer time had elapsed since the injury was received. The fractures were produced by penetrating and perforating rifle balls, shrapnel balls and fragments of shells, those produced by the high speed rifle balls showing much greater fragmentation than those produced by shrapnel. Quite commonly the bone would be simply blown away, leaving a wide space between the ends of the splintered bone. The infection was much greater, however, in fractures produced by shell and shrapnel than in those resulting from penetrating rifle balls, as the latter were not so apt to carry in pieces of clothing, and the injury to the surrounding tissues was much less.

On arriving at the Ambulance all these cases were badly infected, the soft parts much swollen, showing considerable ecchymosis and discharging profusely. In many of the cases free incision and drainage had previously been established at the field hospital. Our management of these most difficult problems was as follows:

1st. Free incision.

2nd. Removal of all foreign bodies, such as fragments of clothing, shell and ball.

3rd. Removal of all the small, loose fragments of bone.

4th. Thorough drainage with large rubber tubing.

We then put the affected limb up in a comfortable position in straight alignment, without attempting perfect position or absolute fixation. Moist dressings of Wright's hypertonic solution of sodium chloride and sodium citrate were used at first when the infection was acute. Later we tried to keep all dressings off the wounds, as the drainage was much better, irrigating the wounds daily with Wright's solution. After the infection had well subsided and before union had begun to take place, the bones were manipulated and the permanent fixation dressing applied.

The results were most satisfactory. Only one amputation was necessary—that a very badly compounded fracture of the humerus, with severe infection due to one of the perfringen groups of bacilli, and in which injury of the brachial artery necessitated ligation at the field hospital. Except for two cases of non-union of the humerus, the union was strong and the functional result very good.

## NEUROLOGICAL ASPECTS

By C. W. STONE, M.D.

There are two principal kinds of wounds, as we saw them: first, shell wounds, including those caused by shrapnel, bombs, hand grenades, and the like. This type of wound comprised somewhat more than the majority among our patients in Paris. The second type were the rifle ball wounds.

To determine the proportion of neurological disturbances among those wounded, we took a series of one hundred unselected cases and found that over one-half of these individuals showed demonstrable disturbances of brain, spinal cord, and peripheral nerves.



Wounds affecting the peripheral nerves are by far the most frequent. Wounds due to rifle balls affecting the brain are the least frequent. Modern rifle ball wounds through the skull are usually fatal. Shell wounds of the brain seemed prone to be associated with brain abscesses as a later complication unless the fragment of shell was removed.

In connection with injuries of the spinal cord, it should be noted that the high speed modern rifle bullet may produce serious damage to the cord without the cord being actually touched by the bullet or by fragments of shattered bone. As an illustration of this, let me cite the case of a soldier who was shot from a distance of fifty yards, the rifle bullet entering the sixth right interspace close to the sternum and leaving the body just to the right of the midline behind at the level of the ninth dorsal spine. This soldier had sudden and complete paralysis below the level of the waist. Because of an absolute loss of motion and sensation in both legs, this man was naturally looked upon as an instance of severance of the spinal cord at the level of the tenth dorsal segment. At autopsy, some weeks later, it was found that the rifle ball had struck the right side of the body of the eleventh dorsal vertebra, taking out a small mass perhaps one-fourth of an inch deep, but had not entered the vertebral canal and had not caused any fractures with fragments of bone inside the canal. There was no free blood in the canal. After hardening, sectioning of the cord showed that the interior was a mass of necrotic material. Here was an instance, then, of very serious damage to the cord apparently dependent upon concussion.

In connection with lesions of the peripheral nerves in association with wounds, it was found that the upper extremity was more frequently involved than the lower. Of the nerves in the upper extremity the musculospiral was most frequently affected, usually in association with fracture of the humerus. The median and ulnar nerves, likewise, were frequently involved. In the lower extremity the external popliteal nerve was found to be most frequently affected. In other words, one meets with the same relative incidence of peripheral nerve lesions among the wounded as is seen in traumatic injuries to nerves in civil life.

We saw but few instances of mental disturbances. Apparently in the early part of the war these were not at all uncommon. Now the weaklings have been weeded out and the others have

become more or less accustomed to the type of life they are leading, and to the noises and horrible sights. In this connection it may be worth mentioning that in the series of one hundred cases of shell or rifle ball wounds, only two cases of traumatic neurasthenia were found.

## SHRAPNEL AND RIFLE WOUNDS

By WILLIAM E. LOWER, M. D.

The shrapnel shell with which you are all undoubtedly familiar is the shell named after the English General Shrapnel, who died about 1842. This shell is filled with all sorts of material, but generally round, leaden bullets and triangular pieces of steel. When the shell explodes these contents are forcibly thrown in every direction and because of the scattering nature of the projectile are quite sure to hit almost everyone in the vicinity, and as we have seen, many may receive multiple wounds as a result of the explosion of these shells. Because of their comparative slow velocity and their size the fragments of shrapnel are not as liable to perforate the structures as is the high velocity bullet, but they penetrate and severely lacerate the soft parts and badly mangle the tissues. These particles are generally infected, and besides, because of their blunt nature, they generally carry into the wounds with them pieces of clothing, which is always infected, and also skin, which as in many cases has not been bathed for weeks and often months, naturally this is also infected. These wounds, therefore, always produce suppuration and at times very dangerous infections. Occasionally, as the shell explodes, the casing will be broken into large fragments and these pieces produce very severe lacerations.

These shells not only produce a high mortality rate, but non-fatal wounds received from them necessitate a very long convalescence, and generally result in more or less permanent injury, a fact which adds very materially to the expense of the war, as these soldiers must be cared for for a long period of time.

Since this war began a hand grenade has been invented which can be thrown from one trench to another, and the explosion of these produces very similar wounds to those from shrapnel shells but with more burning.

The modern bullet, of course, is the most humane of the missiles used in war. The one of which we have seen the most is the German bullet, which is very pointed, with an outer cover of



nickel, the inside being lead. This, when projected with the high velocity imparted by the modern rifle, has a very great penetrating power. Because of this the bullet does not carry into the body with it fragments of clothing as does the low speed shrapnel lead bullet. It is largely on account of this that many of the bullet wounds do not become infected.

The French bullet is a copper bullet and considerably larger than the German bullet. These bullets, as a rule, do not produce the mutilation that the shrapnel bullet does, especially when it strikes soft tissue. There are many cases in which a bullet has gone entirely through the body and has not even stopped the soldier. I can show a picture of one case particularly in which the bullet entered the body between the second and third ribs, on the left side of the chest, apparently right over the heart, its point of exit being under the left shoulder. Aside from spitting up a little blood this man had no particular distress and apparently suffered no damage. Many cases have been shot through the lungs and have been scarcely disabled. Cases have been shot through the abdomen without suffering any severe damage. However, when a rifle bullet does strike a bone it produces extensive fractures. If the range is short the injury is nearly always a perforation, that is, the bullet goes entirely through the object which it strikes. If shot from a distance, the bullet lodges somewhere in the body.

Of course, the X-ray makes it possible to locate these bullets with a great deal of precision. The bullets do some queer tricks occasionally, especially when their course is diverted. We have seen a number of cases in which a bullet struck a bone, followed along the course of the bone and finally lodged at a point quite remote, and at an apparently impossible angle from where it entered. When these bullets strike the jaw they produce very extensive fractures and the pictures of jaw cases which we shall exhibit will show you to some extent the damage done.

We have one case of particular interest, in which one of these German bullets entered the left shoulder and evidently being diverted by the rib, lodged in the heart, or just within the covering of the heart. This soldier, while making an advance in the crouching position to dislodge some German soldiers who occupied a house, was shot from above. The bullet struck him in the left shoulder and knocked him down. He recovered rather quickly from the first effects of this wound and was later sent

to a large military hospital, where the X-ray showed the bullet lodged apparently within the heart muscle. Every time the heart beat the bullet would be seen moving with it. He was advised of the seriousness of the case and sent to the American Ambulance, which we considered a very great compliment to the institution with which we were connected, as it showed the confidence placed in us by the French people. The case was referred to our unit and after several days of observation we found that the patient suffered considerable distress upon exertion. After explaining the case fully to him we decided to operate, as the patient was not at all keen about always carrying in his heart one of the enemy's bullets.

With the aid of nitrous oxid and oxygen we were able to remove this bullet without any catastrophe, thanks to the aid of our anesthetist, Miss Hodgins. He suffered a few complications which were entirely separate from his operation, and at the time we left he was in quite good condition. I have no doubt that he will make a good recovery.

I will just add here that the benefits of nitrous oxid and oxygen and the work of the dentists stand out as the most prominent features of the Ambulance, especially to the visitors who come to see the work.

As you have already heard, we found the French soldier a splendid patient to care for, always obedient, cheerful, appreciative and hopeful.

### SUMMARY

By G. W. CRILE, M. D.

To summarize very briefly some of the aspects of the war, one might say that since the war of 1870, in the treatment of infection, there has been practically no progress made. According to French surgeons very little progress has been made in any department of military surgery except in the use of the X-ray, and perhaps in anesthesia. In the vast number of deaths and disablements of the war up to the present time undoubtedly infection has played a greater role than any other factor. Professor Tuffier stated that the discovery of an antiseptic which could successfully combat infection would add 50,000 men to the firing line.

We have always been standing in the reflected light of the civilization of Europe, and have only recently begun to stand upon our own feet and make our own progress, but we do not



realize the extent of the reaction of these great losses upon us, from which we are certain to suffer greatly. I was appalled to be told that in France alone, up to January 1st, twenty thousand arms and legs have been amputated. This reminds me of a work that is being done in Germany, where already they are collecting the cripples and are having institutions formed for those who have lost their limbs. They are starting to re-educate these defectives in an industrial way, teaching them industrial occupations, fitting them for vocations, supplying artificial legs, etc. In this way Germany is preparing to take care of the by-product of war.

Most of the men at the American Ambulance who lost legs were fitted with artificial limbs supplied by the various members of the board of directors, members of the staff, orderlies, and nurses. Up to the present time the best and most satisfactory artificial legs are made by American manufacturers.

We did not see many injuries of the head, and those that there were proved to be disappointing to the surgeons, for the infection was so severe that nearly all cases died. Those who did not die did very well at first, but later on developed epilepsy, abscesses, etc. Similar results in these cases have been reported from other hospitals in France, and from Germany and England. We saw very few high compound fractures of the thigh, for the reason that these patients after being wounded lie in the trenches for many hours, perhaps for days, and die then from shock, exhaustion or hemorrhage. There were many interesting chest wounds from shell, shrapnel and bullets. The rifle bullets make a clean cut wound, and many of these cases returned to the firing line after ten days in the hospital. The abdominal wounds were disappointing, for nearly all these cases died. In these almost hopeless cases it seemed best to give a large dose of morphia in order to give the patient the best possible chance to pull through, as they occasionally did.

It was my great hope that while in France I might secure sections of the brains, adrenals and livers of soldiers who had died as a result of exhaustion, loss of sleep, emotion and exertion plus their injuries. Fortunately I was able to have these studies made. The results showed exactly the same lesions in these three organs as had been demonstrated before in animal experimentation.

In conclusion, I want to say just a word of what seems to me to be a vitally important matter. That is the enormous duty devolving upon us as far as lies in our power to help everyone of these unfortunates in this war. This country with its continued happiness and prosperity is bound to feel this obligation, and to share with these people. In particular we must not forget Belgium physicians, many of whom with their families are in desperate straits. The treasurer of the American Relief Committee is Doctor F. F. Simpson, of Pittsburgh.

Aside from this there is still another duty resting upon us who are not engaged in this great conflict. The great European universities are now closed; the leading minds of the universities are lost, some by death, some by exhaustion, and now the United States must put forth new efforts to carry on the work of the universe that is thus impaired. It means that Western Reserve University and Lakeside Hospital must do everything in their power to help, that each one of us must redouble his energies and in however small a way try to make up for the great loss abroad.

---

**Surgery of the Spleen.**—Four cases of splenic surgery are reported by E. M. Prince, Birmingham, Ala. (*Journal A. M. A.*, May 8, 1915), on account of the rarity of such case reports. Two were of abscess of the spleen, both relieved, and the third one was splenic anemia in a frail woman, a case which had been considered inoperable. The very large spleen was removed, however, after she had returned when she was in somewhat better condition. The blood picture after operation was interesting, the most striking feature being the large proportion of eosinophils, which suggested Hodgkins' disease. The clinical history, however, together with the absence of glandular enlargement elsewhere, the increase in the fibrous element, and the absence of endothelial growth, point to the splenomegaly of Banti's disease. The spleen weighed 56 ounces, and the blood picture was somewhat similar to the other.

---

**Pyorrhea.**—The claims recently made that endamebas are the cause of periodontal diseases, are taken up and criticized to some extent by T. Sydney Smith, Palo Alto, Cal. (*Journal A. M. A.*, May 8, 1915). He reviews the recent writings on the subject and concludes that more experimental work is needed to properly estimate the value of the emetin hydrochlorid treatment. The published reports of its advocates clearly state that although they have succeeded in destroying the endamebas, they have failed to obliterate the pockets which contained them, and this is not a perfect cure. When proper surgical assistance is given, by removing the calcic deposits, the separated tissues will form a reattachment to the roots of the living teeth, and since this can be secured without the aid of endamebacides, it would seem, he says, that healing does not depend on either the absence or presence of endamebas, but entirely on the character of the tissues and the thoroughness of the dental surgery.



## THE DIAGNOSIS OF CARDIOSPASM\*

By JOHN D. OSMOND, M. D., Cleveland, Ohio

The history, etiology and treatment of cardiospasm were considered in a paper before this Section a year ago. At that time I reported two cases. Tonight I wish to consider more fully the diagnosis of cardiospasm and report three cases.

The diagnosis of cardiospasm is not difficult. However, the condition usually reaches the chronic stage and persists for several years before a diagnosis is finally made. During the acute stage the spasm occurs at intervals of days or weeks. The symptoms consist of dysphagia and cramp-like pains in the chest, radiating to the back and neck and shoulder. The dysphagia usually comes on suddenly, but sometimes develops gradually. There is no inclination for food during the paroxysm, and when taken it may be suddenly and violently rejected. There is considerable variation of resistance in the passage of food through the cardia. The spasm usually relaxes when fluid is taken. The frequent changes in the degree of permeability to food is a characteristic sign. The condition becomes chronic as soon as change in the shape and thickness of oesophagus takes place. Unless relief is afforded, the oesophagus gradually dilates above the spastic cardia until it has a capacity of a pint or more. During the period in which the oesophagus is dilating there is frequent regurgitation of food in an undigested state. At first with every meal, later once daily, and finally every second day.

The diagnosis of the chronic condition with the dilatation of the oesophagus depends on the history of the case, the symptoms, and a determination of the character of the obstruction. Special points in the history to be determined are the presence or absence of syphilis, the previous swallowing of caustics or foreign bodies. The history is usually one of long standing in which there has been discomfort and a choking sensation upon taking food; in which there has been periodic regurgitation of food; in which the regurgitated food does not taste sour. The individual is usually poorly nourished and has gradually lost in weight. The duration of the symptoms vary from three to 25 years. At any time during this period the spasm may become so severe that no food enters the stomach for days. The loss in weight then becomes quite marked and the forlorn hope that the condition will auto-

---

\*Read before The Cleveland Academy of Medicine, April 2, 1915.

matically cure itself is abandoned. The history that medical treatment has been of no avail is also common. Bromides, atropin, oils, diet, bougies and stomach tubes have given only temporary relief.

An examination of the case reveals food contents in the oesophagus even 24 hours after a meal. The contents are either alkaline or neutral and do not change congo paper. Absence of the swallowing sound at the cardia is suggestive of cardiospasm. Normally the swallowing sound can be heard at the cardia within seven seconds after taking liquids. Einhorn states that if the swallowing sound is delayed from 12 to 20 seconds, or now delayed and now absent, cardiospasm is frequently present.

An essential feature in the diagnosis of cardiospasm is the ease with which bougies or stomach tubes can be made to pass through the cardia. Force should never be used in passing the bougie. A bougie is used to measure the distance from the incisor teeth to the obstruction. It assists in the differential diagnosis between diverticulum, stenosis and spasm at the cardia.

The most frequent place for a diverticulum of the oesophagus to occur is on the posterior wall at the pharyngo-oesophageal junction; another type is found on the anterior wall near the bifurcation of the trachea. A third type is found near the cardia. This type is extremely rare. If after a bougie has been easily passed several times it meets firm resistance in the upper oesophagus, a diverticulum is probably present. In cicatricial stenosis there is marked resistance to the passage of a bougie or stomach tube, and this resistance never varies except to increase. Syphilitic strictures are practically confined to the upper portions of the oesophagus and are quite large in extent. Other signs of lues are usually present.

The use of the oesophagoscope is necessary to determine the presence of ulcer, cancer, fissure and other pathologic conditions. As a rule, oesophagoscopy accurately reveals a carcinomatous condition when it is present. It is the only method which allows an early diagnosis of this condition.

Another point to consider in differentiating cardiospasm from malignant strictures is the element of time. If the symptoms have been present two or more years, the evidence is in favor of chronic cardiospasm. In cardiospasm with dilated oesophagus the oesophagoscope reveals the funnel-shaped entrance to the cardia and changes in the mucous membrane.



Satisfactory evidence is furnished by the X-ray. The typical radiograph reveals the oesophagus greatly dilated and the shape of an inverted cone with smooth walls.

Case No. 3. A male, 33 years of age, complained that at times during the past four years food did not seem to enter the stomach. There was a choking sensation. He also had an oc-

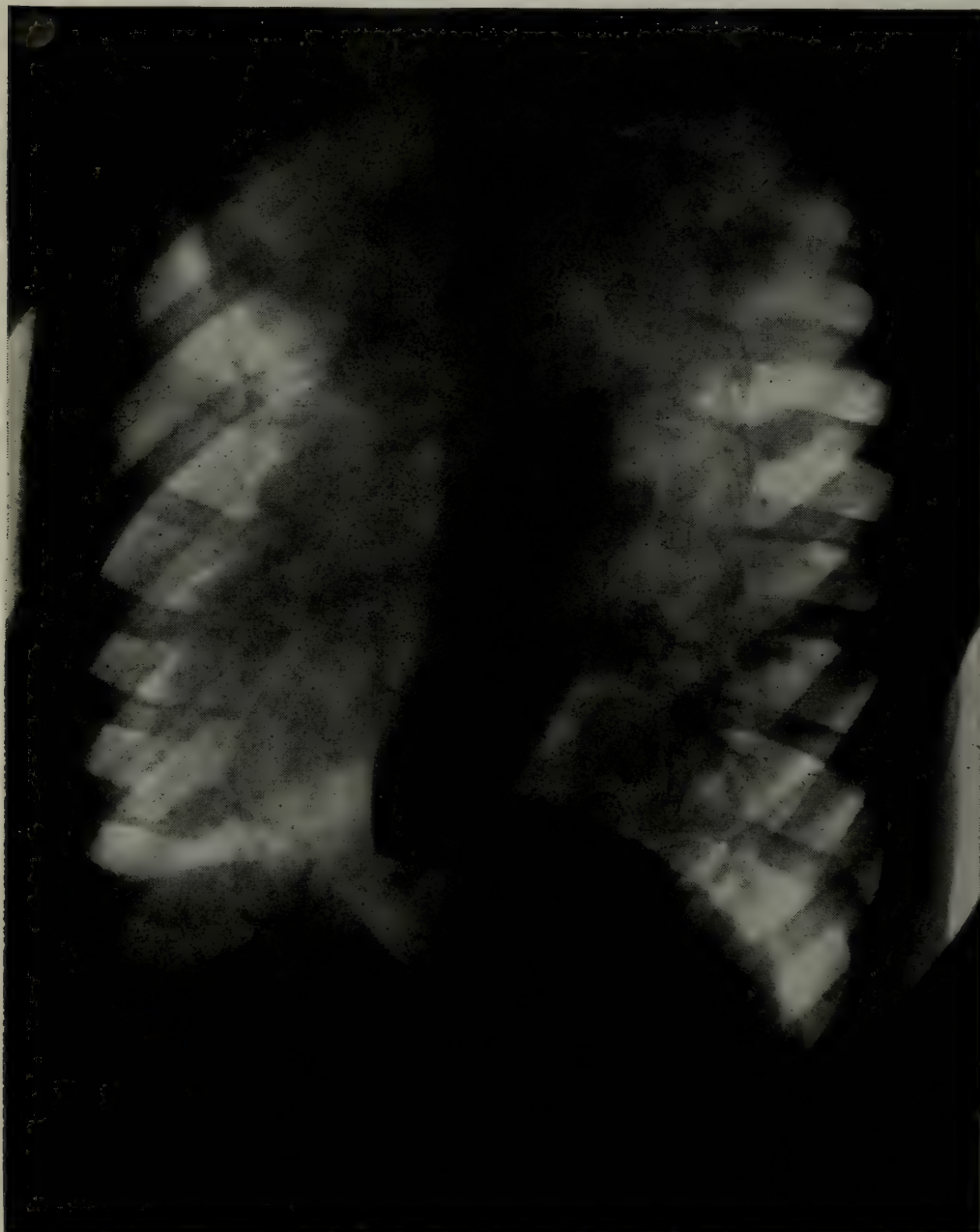


Case No. 3—Cardiospasm.

casional hiccough. Two years after the first symptoms he began to regurgitate food. A diagnosis of cardiospasm was made in May, 1914, by means of the X-ray. He was referred to me for

treatment in September, 1914. He received only one dilatation, because of my absence from the city for several months. He returned to a medical course of treatment and his symptoms are still present. Overstretching the cardia is the only measure that will cure his condition.

Case No. 4. A woman, 36 years of age. The patient is of a nervous type and has goitre. She complained of a choking sensation at the lower end of the oesophagus. She first noticed



Case No. 5—Cardiospasm.

it in 1911. It began suddenly when taking food. The discomfort lasted only a few minutes and then disappeared. The at-



tacks were repeated at intervals for three years. Then, in September, 1914, the attacks occurred at night and wakened her from sleep. On several occasions food was regurgitated into the mouth at night.

Treatment began in December, 1914. The Einhorn dilator has been used four times. The symptoms have disappeared and she has gained eight pounds in weight.

Case No. 5. Male, 20 years of age. He is the oldest of six children. His father died at the age of 48 of cancer. The mother has a large cystic goitre. The previous illnesses were whooping-cough, chickenpox and measles. Five years ago the patient first noticed that he had difficulty in swallowing when eating apples. The next thing he noticed was pain after drinking cold water. He had to stop going to school because he could not eat a cold lunch. Occasionally regurgitation of food occurred for four years. On October 1st, 1914, he suffered exposure in a rainstorm and caught a severe cold. Two days later pain began in the epigastrium and increased in intensity for three weeks. The pain extended directly through to the back. All food was regurgitated. Only liquids entered the stomach during this period. On November 6, 1914, a radiograph was made, showing a typical cardiospasm with dilated oesophagus. There was no examination of the oesophagus with bougie or stomach tube at this time. Four days later a hemorrhage occurred. A large quantity of blood was vomited. In fact, so much blood was lost that by the time the patient arrived at the hospital no radial pulse could be obtained. Subcutaneous saline was administered for several hours. On November 21, 1914, a gastrostomy was performed. No ulcer or anything to account for the hemorrhage was found. A tube was sewed into the stomach to procure nourishment.

I first saw the patient Dec. 30, 1914. He weighed 113 pounds. The cardia was carefully dilated with an Einhorn dilator. He began to take food by mouth the same day. One week later I used the oesophagoscope and found a small scar at the cardia. The Plummer dilator was used the same day. Since that time the patient has taken anything by mouth that he cares to eat. I have used the Einhorn dilator twice since. For a few weeks he avoided taking cold water. It caused some discomfort. Every symptom has disappeared since the last dilatation. On

February 24 he weighed 136 pounds; on March 12, 147 $\frac{3}{4}$ , and tonight, 154, a gain of 41 pounds since the first dilatation three months ago, Dec. 30, 1914.

*Discussion:* Doctor F. W. Hitchings reported the following case of cardiospasm and presented two radiographs of the same:

**Doctor Hitchings' Case of Cardiospasm**

The patient was an unmarried girl, twenty years of age, who complained of being extremely short of breath, especially after ingestion either food or water in however small quantity, and of great difficulty in swallowing.

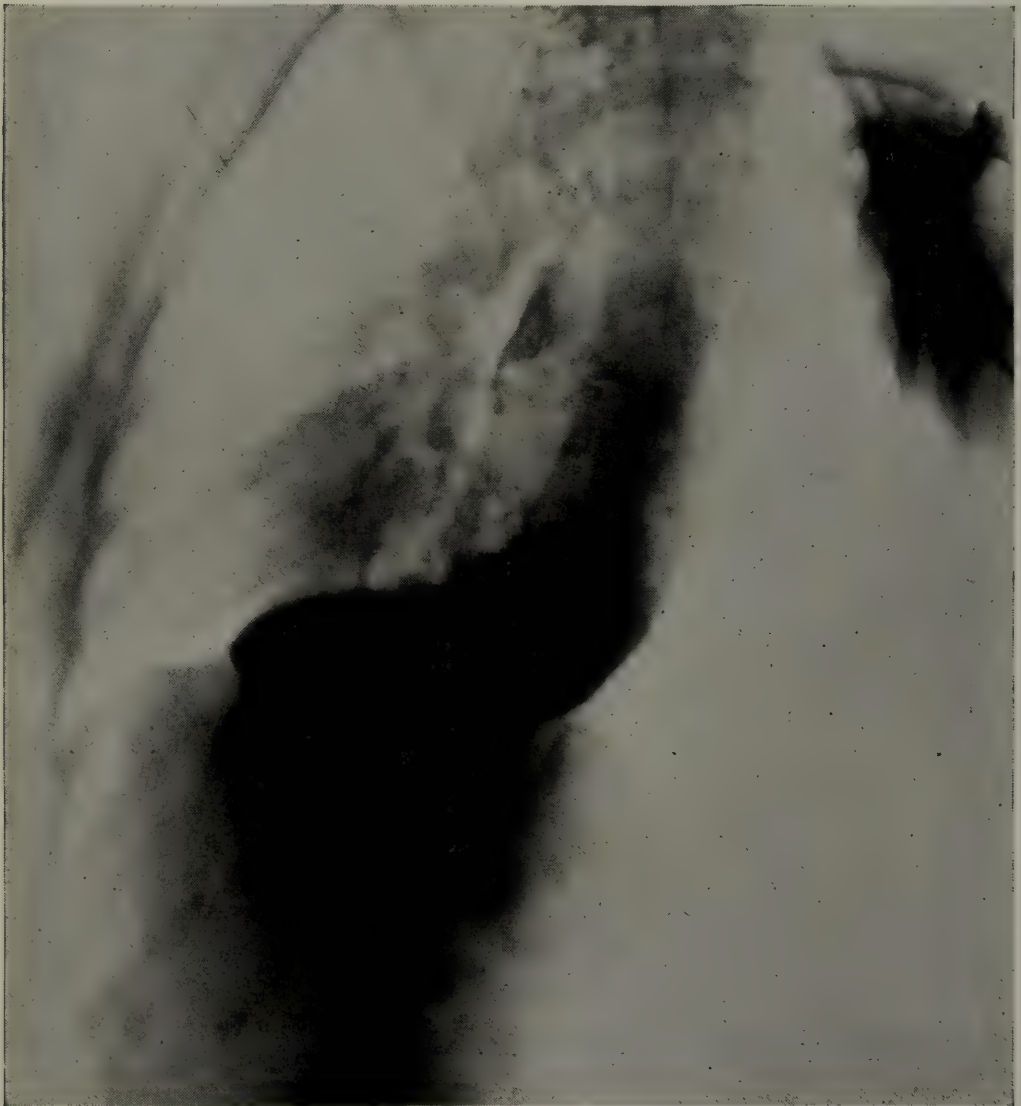


Fig. 1—Cardiospasm

Patient, a girl, 20 years old, had her symptoms follow a severe attack of measles, 8 years ago.





Fig. 2—Cardiospasm.

She first consulted me on December 7, 1914. She gave a history of having had a very severe attack of measles eight years previously, her present symptoms beginning shortly after this illness.

She was anemic and poorly nourished. Her heart was considerably dilated, both to the right and to the left. The heart sounds were feeble, no murmurs being heard.

On making her swallow water, in about twenty-five to thirty seconds it could be heard entering the stomach, so the swallowing time was very much delayed. The diagnosis of cardiospasm was at once made.

On having her skiagraphed, the condition in the cuts was found. As seen in Fig. 1, the oesophagus was tremendously dilated, the cardiac orifice of the stomach being only about one-half inch in diameter. The picture presented by watching the patient swallow bismuth and buttermilk by means of the fluroscope was very interesting. When the first mouthful reached the lower part of the oesophagus, it did not pass through into the stomach. Then as successive swallows were taken the oesophagus dilated more and more, forming a triangular shadow, with the base of the triangle upward. As soon as there was sufficient accumulation the cardia dilated, the position of the bismuth passed into the stomach, and the patient experienced immediate relief.

As will also be seen, besides being remarkably dilated, the lower part of the oesophagus was in an almost horizontal position.

In Fig. 2, the light areas shown by the arrow rather suggests that at this point there was marked constriction, probably due to cicatricial contractions.

On washing out the food contained in the dilated oesophagus, it was found to be neutral, or faintly acid in reaction. During treatment the patient took a tablespoonful of olive oil before meals.

With considerable difficulty at first a No. 20 whalebone bougie was passed into the stomach. Proceeding very carefully over a period of four weeks, using only the bougies at first, and gradually increasing the dilation up to 45, it was then possible to pass an Einhorn dilator. This was not nearly so difficult as one would imagine from the horizontal position of the lower portion of the oesophagus. Dilatation with this instrument was made very gradually and finally brought up to Fig. 10, on the scale. From the first the patient began to have less difficulty in swallowing and by the time the dilatation was completed, up to the maximum, relief was complete.

Aside from giving tincture of digitalis for the cardiac condition, and correcting the anemia with Bland's pills, no other medication was used.

In a period of three months the relief has been complete.



## PERICARDIAL CYST

By A. R. TIMME, Cleveland, from the Pathological Laboratories of the Lakeside Hospital and of the School of Medicine of Western Reserve University.

The following case is considered worthy of special report because of its rarity. Cysts of the pericardium are described in few of the standard texts on pathology and then particularly in association with chronic inflammatory processes.<sup>1</sup> In the present instance, however, the condition appears to be a diverticulum of non-inflammatory origin.

In 1885, Coen<sup>2</sup> described a pericardial cyst or diverticulum remarkably like the one under discussion. The cyst occurred in a man who died with double mitral disease, aortic stenosis, and pericarditis. It was about the same size (that of an egg) and occurred in practically the same location as the present one. He also cites several rare cases of congenital and acquired affections of the pericardium, such as cysts and diverticuli in all locations of the sac, projecting both from and into the sac; diaphragmatic herniae into the pericardium, containing a lobe of the liver; rupture of the left ventricle causing hemorrhage into the pericardium and secondarily a diverticulum. Bristow's<sup>3</sup> case is quite similar to that of Coen.



Photograph of cyst as it appears in the gross specimen.

Cosini<sup>4</sup> in 1890 described a cyst of the pericardium, arising in the angle between the pulmonary artery and the right anterior pulmonary vein. This was a multiloculated, pedunculated structure, 2 cm. x 3½ cm., attached to a pedicle 5 mm. long and 3 mm. thick. All the lobules had a common communication and con-

tained a serous liquid. Corsini considered the affair as a congenital growth arising from a primitive exuberance of the pericardial mesothelium.

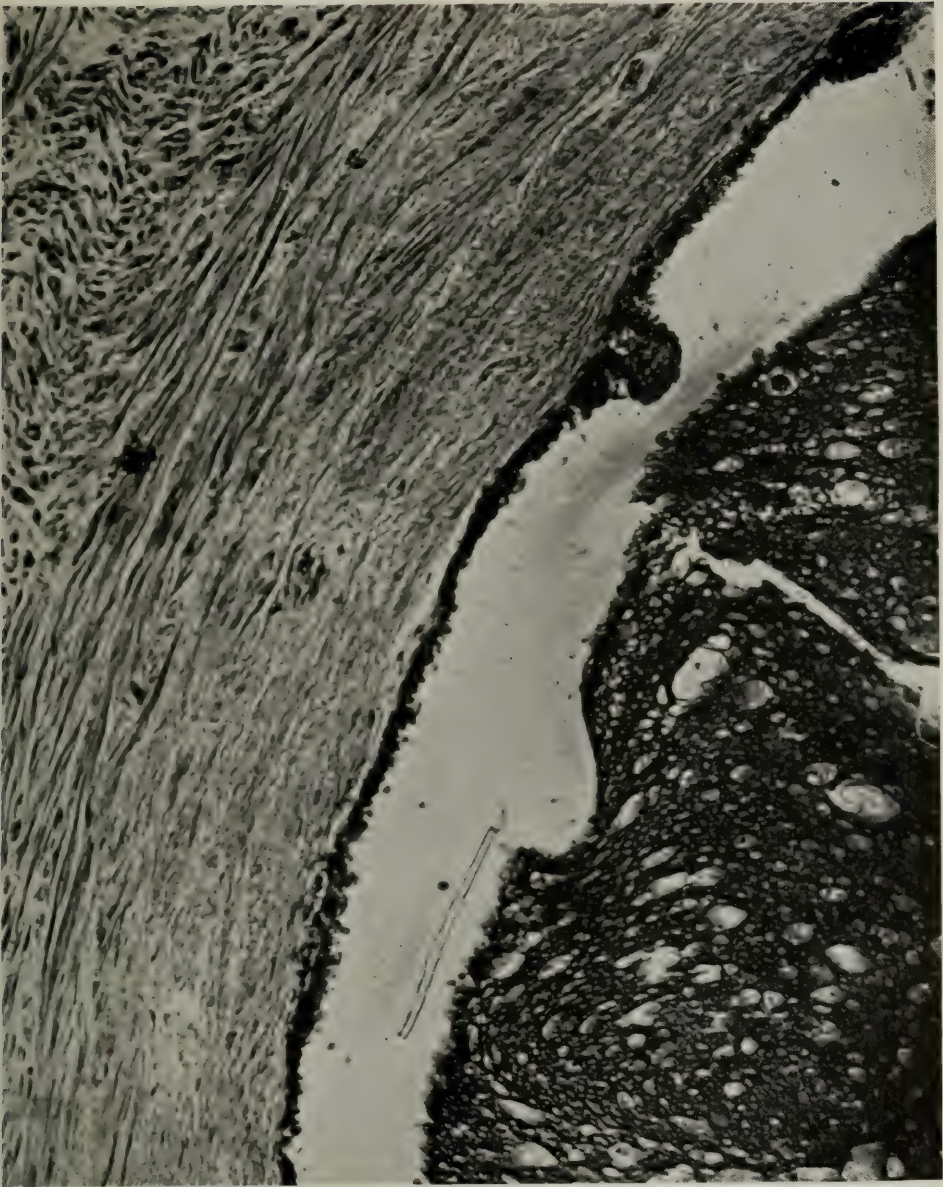
Rohn<sup>5</sup> in 1903 described four diverticuli of the pericardium, one of which reached the size of a fist. He considered them all as due to evagination of the serous layer through a defect in the fibrous. He also demonstrated a mediastinal cyst arising in the same manner and later separating from the point or origin by constriction.

The present one was found in a 57-year-old male who entered the hospital with a complaint of incontinence and retention of the urine as well as edema for the past month. Physical examination showed a slightly enlarged heart with a soft systolic murmur. Over the end of the sternum could be heard a to and fro friction-rub with each cardiac cycle during inspiration. A suprapubic puncture was done to relieve the distention of the bladder, but the patient later died in uremic coma.

On autopsy, the bladder and ureters were found to be moderately distended or dilated, the stricture being in the prostatic urethra. The kidneys showed an acute nephritis. The lungs showed nothing beyond a congestion. The myo and endocardium were normal. The pericardial sac was slightly increased in thickness; it contained about 50 cc. of a clear straw-colored liquid not under tension. The entire serous surface was covered with a thick fibrinous exudate and showed everywhere a delicate villous surface with many delicate adhesions. The exudate was easily removed and left a fine granular surface.

On the right side at the cardio-hepatic angle, there was an ovoid cyst-like body, rather firm and fluctuating. It was attached to the lower anterior extremity of the pericardial sac. Although it could not be emptied by pressure, gentle probing along the pericardial surface opened up a small connection of only a few mm. diameter. This at once suggested a diverticulum. On cutting the sac, it was found to be a multiloculated cyst containing a thick yellow liquid. There was apparently no connection between the branches, but the cyst nearest the pericardium opened into it. The contents of this nearest cyst seemed to be infected from the pericarditis by contiguity. The wall was rather thick, tough and inelastic. Three of the locules, one of them with its contents, hardened in formalin, are shown in Plate 1.





Photomicrograph showing cyst wall, endothelial lining and cyst content.

The cyst, with such of its contents as did not escape, was hardened in formalin and sectioned. The hematoxylin and eosin stain shows a cyst with a fibrous wall and a lining membrane of cuboidal cells. The wall contains fibrous tissue; that immediately under the lining membrane is thick and dense and contains few blood vessels; that farther remote is more vascular. The lining membrane consists of cuboidal cells with clear cytoplasm and deeply staining nuclei. The cells are arranged in a single layer. The plate shows a small finger-like process extending into the lumen, with a bit of fibrous tissue as a core.

Several stains were tried on the content of the cyst. Hematoxylin and eosin stain showed it to be a clear, homogenous substance with many small vacuoles, reacting to the acid rather than the basic stain. Weigert's differential fibrin stain, controlled by a section of fibrinous pleurisy, gave absolutely no signs of fibrin in either exudate, membrane or wall. The phosphotungstic acid stain for fibrin was likewise negative, as was the iodine stain for amyloid. By varying the proportions of the picric acid and the acid-fuchsin of Van Gieson's staining method, the cyst contents could be made to vary from orange to deep red in color; the connective tissue wall stained red. This characterized the material as hyaline or the colloid of Ernst. It was, therefore, in all probability, a secretion of the lining membrane which in turn was a modified and swollen endothelium derived from that of the pericardium. It is likely that the condition is a diverticulum of the pericardium, which arose in the manner described by Rohn—evagination of the serous layer through a defect in the fibrous layer of the pericardial sac. The swollen endothelial cells of the lining membrane, on the other hand, suggested the theory of Corsini—a congenital growth arising from primitive exuberance of the mesothelium. The concomitant acute pericarditis had to be regarded as coincidental, since it is inconceivable how a structure of this sort can be secondary to an acute process; there were no signs of a chronic process in the pericardium.

### References

1. Kaufmann, E., *Lehrbuch der speciellen pathologischen Anatomie*, Berlin, 1904, p. 6.
2. Coen, E., *Henie e Diverticoli del Pericardio*, *Bull. delle Scienze Med. di Bologna*, 1885.
3. Bristow, *Diverticulum from the Pericardium*, *Trans. Path. Soc.*, London, 1869, XX, 101.
4. Cosini, *Cisti del Pericardio*, *Ateneo Med. Parm.*, Parma, 1890, IV, 142.
5. Rohn, *Ueber Divertikel und Cystenbildung am Perikard*, *Prag. med. Wochenschr.*, 1903, XXVIII, 461.



## CAVERNOUS HEMANGIOMA OF THE PERICARDIUM

By A. R. TIMME, Cleveland, from the Pathological Laboratories of the Lakeside Hospital and of the School of Medicine of Western Reserve University.

This condition is extremely unusual in any part of the heart. Schuster<sup>1</sup> has reported a hemangioma on a papillary muscle of the right ventricle in a new born child. Rau<sup>2</sup> reported a similar occurrence in a 56-year-old man, and Train<sup>3</sup> one in the left ventricle of a 78-year-old man.

As far as pericardial hemangioma is concerned, there is only one case in literature, that of Lefas<sup>4</sup>. This was a telangiectasis in the wall of the left auricle of a 76-year-old female. Rupture of this had led to sudden death. Lefas found the pericardial sac filled with blood-clots and an area on the left auricular wall, the size of a half-dollar, covered by a fast-adhering clot. On sectioning, this showed the structure of telangiectasis.



Photograph of lesion as it appears in the gross. A block has been cut from the tumor for histological examination.

The case under discussion was a 58-year-old female with a complaint of shortness of breath and swelling of the feet and a

diagnosis of mitral stenosis and insufficiency. There was no friction rub during life. The patient died in decompensation.

At autopsy the clinical diagnosis was borne out, and in addition were found arterio-sclerosis, atheroma and calcification-plaques of the aorta, and also thrombosis at the aortic bifurcation, with complete thrombosis of both common iliacs for three inches, with complete organization; there was ossification with marrow-formation in the walls of the lower aorta and iliacs.



Photomicrograph showing large blood sinuses containing partly clotted blood.



The pericardium contained some fat and was heavier than usual. The sac contained 75 cc. of a clear yellowish liquid with an occasional string of fibrin. On the portion of the parietal layer overlying the anterior surface of the heart, and a little below the middle point, was situated a dark bluish mass of distended vessels. These were about the size of a normal radial artery and were closely bound together. The whole structure covered an area slightly larger than the size of a twenty-five cent piece. The surface was perfectly smooth and glistening, there being no rupture, adhesions, exudate or external clotting.

Histologically, the structure showed a collection of dilated blood-vessels. These were lined by endothelial cells which were slightly larger than the usual vascular endothelium and showed distinct nuclei and outlines by the hematoxylin and eosin stain. The walls of these vessels contained no muscle or elastic tissue whatever; they were fibrous in character. The contents of the vessels were typical blood-clots, meshworks of fibrin with masses of red cells alone, of white cells alone or of the two in mixture.

In areas the red cells had lost all form and were but a conglomerate, amorphous mass with scattered deposits of blood-pigment.

#### References

1. Schuster, Hemangioma Cavernosum im Herzen eines Neugeborenen, *Virchow's Arch.*, 1914, CXV, 335.
2. Rau, quoted by Schuster, *loc. cit.*
3. Train, quoted by Schuster, *loc. cit.*
4. Lefas, Morte Subite par Rupture d'Angiome Pericard, *Bull. Soc. Anat. de Paris*, 1898, LXXIII, 464.

**Quinin After Operation.**—A. Bonnot, St. Louis, gives his experience with the use of rectal injections of muriate of quinin after operative procedure. He first noticed the good effects in a case of appendicitis in which he had instructed the nurse to give the patient 10 grains of quinin muriate every six hours until the patient was able to take it by the mouth. The nausea and vomiting, gas pains, backache and postoperative thirst were lacking in the patient and he has since used it in later laparotomies with strikingly good results. In all cases, the postoperative thirst was much retarded, gas pains were lacking in nineteen cases out of twenty, and in none was there the usual backache. In only four cases was nausea and vomiting pronounced, in ten there was none, and in six it was only slight. Doctor Willis Young, of St. Louis, has also used this method with similar results.—*Journal A. M. A.*

---

**Mouth Infection.**—E. C. Rosenow, Chicago, also took part in the symposium on mouth infection in the Section on Stomatology of the American Medical Association at its last meeting. Interesting results, he said, have been obtained in the study of various systemic disorders, such as rheumatism, arthritis, and Hodgkins disease. One striking thing noticed with some of the more clinical infections is that the connection of the micro-organisms found in the lesions may be quite different from that of those in the focus of infection at the same time. This does not minimize the importance, however, of the focus. The organisms in the tissues may have undergone a change. This fact should be borne in mind in the use of the autogenous vaccines. While the most common location of the focus in the various infections is probably in the head, it may be located elsewhere. Thus, in two cases of typical rheumatism, he succeeded in isolating the *Streptococcus rheumaticus* from the stools, and in other cases from an infected ingrowing toe-nail, and from a wound in the thumb. The abscesses, or changes found in the roots of the teeth in various systemic diseases, especially in chronic arthritis, may or may not be primary; but if found, the condition should be corrected, because vaccination or other treatment largely fails as long as an active focus of infection exists. In the light of our present knowledge, the argument that infections of the mouth are so common in apparently healthy individuals does not minimize their importance. We must keep in mind that failure sometimes results from not finding the exact cause or focus. He refers to some cases which illustrate these points, two or three of which have been alluded to already. The question of a focus of infection is not only a matter for the dentist and stomatologist, but for the general practitioner and surgeon. Every branch of medicine needs to be considered to run the matter down, and identify the real cause. Another point to determine is what kind of organisms act on individual tissues. There are, he says, various properties that determine the affinity of the micro-organism for the tissue. He is sure they exist, but where are they formed? He thinks it is quite clear that they develop these properties in the focus of infection, which must be worked on as not merely places of infection, but as the place of entrance where the various organisms acquire their various infections.—*Journal A. M. A.*



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902.

Capital Stock, \$6,000

---

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH F. STONE  
2318 PROSPECT AVENUE

ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.  
ROGER G. PERKINS, M. D.

JOHN PHILLIPS, M. B.  
T. WINGATE TODD, F. R. C. S.

COLLABORATORS

C. E. FORD, M. D.  
H. E. HANDERSON, M. D.  
S. W. KELLY, M. D.  
J. J. R. MACLEOD, M. D.

DAVID MARINE, M. D.  
V. C. ROWLAND, M. D.  
H. L. SANFORD, M. D.  
TORALD SOLLMANN, M. D.

G. N. STEWART, M. D.

---

EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.  
*Vice-President*, C. E. BRIGGS, M. D.

*Secretary*, C. A. HAMANN, M. D.  
*Treasurer*, H. G. SHERMAN, M. D.

---

BOARD OF DIRECTORS

C. E. BRIGGS, M. D.  
F. E. BUNTS, M. D.  
G. W. CRILE, M. D.

C. A. HAMANN, M. D.  
C. F. HOOVER, M. D.  
S. H. LARGE, M. D.  
J. B. MCGEE, M. D.

J. P. SAWYER, M. D.  
H. G. SHERMAN, M. D.  
W. H. WEIR, M. D.

---

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

---

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

---

## EDITORIAL

---

### The Mayo Foundation

The matter of university gifts and endowments is again before the public, both lay and medical, in the question of the proposed University of Minnesota—Mayo Foundation Affiliation. Without wishing to enter the controversy in any way, the *Journal* feels it a duty to present certain features of the plan under consideration more particularly as at least one of the Cleveland daily papers has published an editorial that may be misleading. In the form of the "second statement" there is proposed a tem-

porary or experimental period of affiliation in order to determine finally the feasibility of the scheme. There is provided a fund of \$1,500,000, which is to be under the direction of a board of scientific directors appointed jointly by the Trustees of the Foundation and the Administrative Board of the Medical School. Ultimately the fund may be under the direction of the Board of Regents of the University, subject to the conditions that it be invested in government (federal, state or local) securities, that its income be used for the promotion of medical education and research and that the Foundation be maintained in the City of Rochester, Minnesota. The opponents of the scheme state that "the most vital defects of the plan are actually three in number: 1st. The impossibility of separating the business activities of the firm from those proper to a philanthropic foundation for teaching and research. 2nd. That the perpetration of the firm itself is attempted and would be achieved by the Foundation. 3rd. The control of the Foundation by the firm." Many details have been gone over by the proponents and the opponents of the scheme and the statements of both are much more lengthy than is indicated here. Broadly speaking, however, there is offered an affiliation which ultimately becomes a gift to the university, with certain conditions and restrictions. Leaving aside questions of detail and relative advantages to be gained by one side or the other, the problem that must be solved by the University of Minnesota in the present instance, and by other universities in time to come, is as to how far the university will permit itself to be directed or limited in the disposition of funds acquired by the gift. It would seem perfectly proper that a benefactor may indicate to the university recipient that the funds should be used for fairly definite purposes, as for example in the H. K. Cushing Foundation in Western Reserve University, the John Herr Musser Foundation in the University of Pennsylvania, the Hooper Foundation in the University of California, and numerous other similar foundations in other universities. In the present instance the matter seems to be different in many respects and the University of Minnesota must decide just how far it will permit itself to be restricted in its activities by the acceptance of an affiliation or gift and in balancing the advantages and the disadvantages must consider the problem not only from the point of view of this particular foundation, but rather from the broader point of view of a definite university policy.

H. T. K.



## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. McGEE, M. D., Cleveland

**Opium:** D. I. Macht, in the *Journal A. M. A.* for May 1, considers the action of the opium alkaloids individually and in combination with each other on the coronary artery and the coronary circulation. Although opium and its derivatives are not classed by pharmacologists with the so-called "cardiac drugs," every practitioner can testify to their value in the treatment of cardiac and vascular conditions. All the great clinical authorities concede to morphin an undisputed place in the armamentarium of cardiac therapy. Osler speaks of it for nocturnal dyspnea, restlessness and distressing feelings of anxiety as invaluable, and in angina pectoris it is put second only to the volatile nitrites. Indeed, Krehl places it first, when he says: "In severe cases morphin is indispensable; in selected cases, amyl nitrite and nitroglycerin are of help. The general impression seems to be that the opiates in heart disease do not act on the heart and vessels themselves, but indirectly through quieting the nervous system. The evidence for this theory is chiefly empirical, and considering the importance of opium in the Pharmacopoeia, it is surprising to find how few experimental data there are on the action of that drug on the circulation. Opium is the nidus of twenty-two or more alkaloids, of which at least a half-dozen are present in sufficient quantities to produce definite pharmacodynamic effect. How do each of these act on the heart or vessels, and which of them is to be preferred in various cardiovascular conditions? Inasmuch as all opium alkaloids in excessive quantities are depressant to the heart, and inasmuch as caffein is one of the chief pharmacologic antidotes to opium, and is at the same time a cardiac stimulant, it was of interest to learn the action of a combination of caffein and some of the alkaloids studied. It was found that caffein alone dilates the coronary artery, and that this action is not antagonized by the opium alkaloids. Thus a combination of papaverin and caffein gives a dilatation of the coronary ring. In respect to the cardiac effect, it was found that caffein, given simultaneously with an opiate, produced cardiac stimulation and counteracted any cardiac depression that might otherwise have occurred. His conclusions are: 1. Of the principal opium alkaloids, some affect the coronary circulation markedly, others slightly, and still others not at all. 2. Morphin produces a mild dilatation of the coronary, codein a very slight one, narcotin and papaverin a very marked one, and thebain none at all. 3. A combination of morphin and narcotin produces a much lesser relaxation of the coronary artery than that produced by each of them individually. 4. This action of the opium alkaloids has been studied in three different ways, and probably holds good in the clinic. 5. It is hoped that these observations may conduce to a more rational therapy of cardiac conditions.

---

**Diabetes:** In the *Post Graduate* for February, Jacob Gutman writes concerning diabetes. As no definite causative factor is known, diabetes mellitus cannot be very well attacked etiologically. Yet, in the light of our present knowledge, we do know the influences exerted by certain organs of the body upon the liver and through it upon the sugar equilibrium. By excitation or depression of these controlling forces, we can in a measure control the glycosuria. Thus we are able to interrupt certain stimulations of the brain caused by excitement, grief, joy, anger, et cetera, from reacting upon the sugar warehouse, the liver, and affecting its activity. An event, if not averted, resulting in an additional output of sugar, and an increase of glycosuria. On the other hand, we may decrease the latter by promoting good humor, happy surroundings, mental rest, et cetera, for the patient. We thus, in other words, by the exclusion of possible causes of irritation, are employing rational means of ameliorating the severity of the disease. Another application of similar therapy is found in the decreasing of excitability of the sympathetic system. This diminishes the intensity of the efferent stimulation of the sugar source

and thus lessens the influence upon the activity of the chromaffin system. The two systems, the cerebral and the sympathetic, can be controlled, particularly in the severe types of diabetes, by opium or its derivatives; also by salicylates antipyrin, jambul, by physical methods, nervines, et cetera. Here is where the usefulness of drugs comes in, and their limitations become apparent. In other words, whenever the glycosuria is promoted by hyperactivity or over-irritability of the cerebro-sympathetic division of the sugar-regulating mechanism, some relief may be expected from the employment of the drugs enumerated. On the other hand, we may counterbalance the over-activity of the cerebrosympathetic systems by lending our support to their antagonist, the pancreas and its tributary organs, the thyroid, parathyroids, and pituitary body. While we have no definitely established means at hand to increase the internal secretion of the pancreas, yet we may accomplish this by the administration of drugs known to affect its external secretion, and thereby influence its internal functioning. For such purpose the use of pancreon pancreatin, Zulzer's secretin, mineral acids and vagus irritants are indicated, and followed in many cases by very gratifying results. He believes that in view of the peculiarities of diabetes our aim should be directed to the following: 1. To remove or prevent dangerous acidosis. 2. To abolish, or at least minimize, the hyperglycemia, to quiet commotion in the sugar factory, as Noorden calls it. 3. To support the organism and to replace its losses. 4. To raise the point of tolerance for carbohydrates. 5. To avoid or remove serious complications.

---

**Basedow's Disease:** O. Hensel, in the *Medical Record* for May 8th, states as to Basedow's disease that it cannot be sufficiently emphasized that every case treated medically should be under constant control, for the result cannot be foretold. In the treatment of dysthyroidism and Basedow's disease, we must consider the medical and surgical aspects, and the effect of the X-rays. All except the advanced cases should be treated medically at first, even though we have no drug as yet that always exercises a specific effect. The older drugs, such as quinin and ergot, are sometimes of value, but more can usually be expected from the phosphate and glycerophosphate of soda if given in sufficiently large (half dram) doses. Heart stimulants, such as digitalis and strophanthus, which would normally slow a rapid pulse, have no effect upon the tachycardia, unless there is absolute myocardial insufficiency. We rarely can get along without nerve sedatives, and for the milder cases the modern valerian preparations and the bromides will be sufficient, while the severer cases often require opiates. Preference should be given to the less habit-forming ones, as codein and dionin, but often the same results can be accomplished with veronal and medinal. The most recent veronal derivative, luminal, if given in small doses (one grain), often exhibits a specific effect upon the tremor, nervous excitement and abnormal psychic state, and can be recommended most highly. Thymus and ovarian extract, and even pancreatic extract, have been given with doubtful results. Rodagen, the dried milk of thyroidectomized goats, in grain doses, is preferred by some, but in his cases has proved disappointing. The Antithyroidine of Moebius undoubtedly is effectual in alleviating most of the distressing subjective symptoms, and also has a decidedly beneficial action upon many of the objective signs if given in sufficiently large doses. The experimental evidence is, however, against this. The real value of every medication we order is so much obscured by the dietetic and hygienic measures that we feel it our duty to recommend that it is very difficult to come to any conclusion as to the effect of any given drug. The preparation of Beebe, he believes, does more harm than good, and he warns against its use. There remains, then, as reliable therapeutic agents for the internist only dietetic and hygienic measures. Many of the



patients will improve spontaneously without medication, others get well on a lactovegetable diet, a rest cure with forced feeding, and hydrotherapy, with only such drugs as symptoms may require.

---

**Dermatologic Therapeutics:** Moses Scholtz, in the May number of the *Therapeutic Gazette*, considers the therapeutic resources of modern dermatology. Broadly speaking, dermatological therapeutics can be divided into two classes—constitutional and local. The rationale of constitutional treatment is based on a presumption that skin diseases are nothing but a local manifestation of a constitutional or metabolic disorder, and that the local lesions will take care of themselves if the etiological systemic factor at fault is eliminated. This idea, by the way, is extremely popular with the laity, who always insist on getting “a blood medicine” in all kinds of skin disorders, some being reluctant to treat their skin diseases from fear of “driving them in,” under the belief that they are better off while the eruption is out. The etiological importance of constitutional factors in skin diseases is somewhat over-estimated by the laity and profession alike. Direct etiological relationship between local lesions and systemic factors is best manifested in so-called symptomatic dermatoses, which are usually of acute character, symmetrical and universal in distribution. Such are the acute infections exanthemata and drug eruptions. In skin affections limited in extent, with a few or single patches, it is natural to infer that besides constitutional predisposition there must be some local external or nutritive factors at work that render this particular area a place of least resistance and limit to it, manifestation of the systemic irritant. This contention is borne out by clinical evidence, that only in a very small minority of the cases can constitutional treatment alone clear up the local lesions. In the great majority of skin diseases local treatment is not only helpful but absolutely indispensable. The indications and administration of constitutional treatment belong properly in the domain of internal medicine, and medication is admittedly the most unsatisfactory chapter in dermatology. Arsenic is the only drug that has been proven to exert a specification of stimulation of the epithelial layers of the skin. Arsenic should never be given in acute or subacute conditions of the skin, but is very valuable in the chronic persistent affections, particularly those associated with nervous debility, as psoriasis, lichen planus, pemphigus, dermatitis herpetiformis. Probably the best form of administration is the hypodermic use of cacodylate of sodium, 0.1 to 0.2 per dose, three times a week. It should not be forgotten that prolonged use of arsenic may produce keratoses, with danger of late malignant degeneration. Sulphur follows arsenic in popularity as a skin remedy. Yet, used internally, it is decidedly inferior in efficiency to local applications. Its clinical value is undoubtedly due to its distinct purgative action, though it must be admitted that a small amount of sulphur does reach the sebaceous glands, where it can exert a slight stimulating effect. Internal administration of sulphur in syphilis has proven to be of great assistance in the elimination of mercury from the system, and in preventing mercurialism. The most convenient form of administration is in the form of sulphur cream of tartar tablets, three or four times a day, in plenty of water. As to vaccine and serum therapy it is yet in the experimental stage.

---

**Pertussis:** Paul Luttinger, in the *New York Medical Journal* for May 22nd, reports upon the curative and prophylactic worth of the vaccine treatment of pertussis. They conclude that if we admit the Bordet-Gengou etiology of pertussis we must free ourselves from a few superstitions regarding whooping cough. One of these is the infectiousness of the paroxysmal stage, which like that of the scales in scarlet fever, seems to have been unduly exaggerated. The fact that the Bordet-Gengou bacillus has been most often found in the sputum of the catarrhal and

rarely later than the first week of the paroxysmal stage, points to the early part of the disease as the most infectious, and there would seem to be no necessity for the child to be kept in the house for more than a week after the whoop appears. If accompanied by a competent guardian who takes care to collect the expectoration in a paper bag, to be subsequently burned, and sees to it that the child does not whoop or sneeze in other children's faces, the pertussis patient may be allowed out of doors from the beginning. The conclusions drawn are as follows:

1. Pertussis stock vaccines, as prepared by the Bureau of Laboratories, seem to have a prophylactic value when given in high doses.

2. In the treatment of pertussis, these vaccines seem to have shortened the duration and severity of the paroxysmal stage; the average duration of the whoop being twenty-five days, compared to forty days of those treated with drugs.

3. Further experiments with the view of obtaining more effective vaccines, and closer co-operation of the profession in public health education, may help in the eradication of pertussis, which kills yearly ten thousand American children.

---

### NEW AND NONOFFICIAL REMEDIES

During May the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies:

Hoffman-LaRoche Chemical Works:

Papaverine Hydrochloride, Roche.

Papaverine Hydrochloride, Roche, Tablets.

Papaverine Sulphate, Roche, Ampules.

Hynson, Westcott & Co.:

Ouabain Ampules, H., W. & Co.

Merck & Co.:

Papaverine Hydrochloride, Merck.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Papaverine.—An alkaloid obtained from opium, but not chemically related to morphin. Its use has been proposed in various atonic conditions of the smooth muscles, particularly in gastric and intestinal spasms, for the diagnosis of pyloric spasm, biliary colic and in bronchial spasm. It is a feeble analgesic and local anesthetic. Neither tolerance nor habituation from its use has been reported. It is used in the form of its salts (see below).

Papaverine Hydrochloride.—This contains not less than 88 per cent of papaverine. Papaverine hydrochloride is odorless, bitter and permanent in air. It is sparingly soluble in water; soluble in alcohol; very soluble in chloroform; insoluble in ether. It is marketed as:

Papaverine Hydrochloride, Merck.—Merck & Co., New York.

Papaverine Hydrochloride, Roche.—Hoffman-LaRoche Chemical Works, New York.

Papaverine Hydrochloride, Roche, Tablets.—Each tablet contains papaverine hydrochloride 0.04 Gm. Hoffman-LaRoche Chemical Works, New York (*Jour. A. M. A.*, May 29, 1915, p. 1849).

Papaverine Sulphate.—This contains not less than 85 per cent of papaverine. Papaverine sulphate is odorless, bitter and slightly hygroscopic. It is soluble in water and in alcohol; very soluble in chloroform; insoluble in ether. It is marketed as:

Papaverine Sulphate, Roche, Ampules.—Each ampule contains 0.04 Gm. papaverine sulphate. Hoffman-LaRoche Chemical Works, New York (*Jour. A. M. A.*, May 29, 1915, p. 1849).



## The Academy of Medicine of Cleveland

### ACADEMY MEETING

The one hundred and twentieth regular meeting of the Academy was held Friday, May 21, 1915, at the Cleveland Medical Library, the President, C. F. Hoover, in the chair.

The regular program follows:

**1. The Spleen in Relation to Blood Destruction and Regeneration, by Richard Mills Pearce, Professor of Research Medicine, University of Pennsylvania.**

Present research was taken up for the purpose of elucidating those conditions which are characterized by enlargement of the spleen, anemia and jaundice. All of the experiments were performed on dogs. Three main questions were considered, namely:

1. What happens when the spleen is removed from a normal dog?
2. What comparative changes occur when a hemolytic agent is introduced into the circulation of a splenectomized animal?
3. What is the tendency of a splenectomized animal to jaundice when a hemolytic agent is introduced into the circulation?

When the spleen is removed from a normal dog an anemia of moderate grade develops, which reaches its maximum at varying intervals after operation, but generally is constant. It is observed that there is a greater drop in the amount of hemoglobin than in the number of red blood cells. It is further observed that the red blood cells in such an animal become much more resistant than those of normal animals. The tendency to jaundice in a splenectomized animal when a hemolytic agent is introduced into the circulation is far less than in the normal animal. Great importance was not laid on the behavior of the leucocytes in such cases, but it was observed that following splenectomy there was first a sharp increase in the number of leucocytes, followed by a sharp and later by a progressive fall. After a certain length of time the eosinophyles disappear entirely from the circulation.

What causes the anemia which develops in a splenectomized animal? Does the spleen form red blood corpuscles? Does it furnish a hormone which acts as an excitant to red blood cell formation? It was found that the injection of extract of spleen into normal animals caused a marked increase in the hemoglobin and in the number of red blood cells. However, injection of splenic extract into splenectomized animals was without any such effect.

Another point to be considered relative to the anemia is whether the spleen aids in conserving the iron content of the body, and if so, when removed, does the anemia develop for that reason? Animals, anemic following splenectomy, were fed iron without effect. There seems to be absolutely no change in the iron metabolism in such cases. If the spleen originally has a function relative to iron metabolism, other organs undoubtedly assume this function after the former is removed.

It was observed in a large series of cases that all of the animals did not develop a well marked anemia. The animals were all kennel fed, that is, their diet consisted of ordinary table scraps. It was found that on a cooked diet, after splenectomy, a marked anemia had a greater tendency to develop than when the animals were fed on a raw diet. Thus, the diet probably has some effect in the development of the anemia, although the removal of the spleen is a vital factor in its production.

The spleen in man is removed, generally, for one of two reasons. Either removal is made following severe trauma, or the operation is considered to be indicated in splenomegaly. In many cases the blood picture before operation is far from being a normal one. For this reason, it is difficult to say in these cases whether there is an improvement in the blood picture, after operation. This applies chiefly to the red blood cells. It is probable that in man, as in dog, removal of the spleen results in the development of a slight or rather moderate anemia. Need

for more accurate clinical work in such cases is imperative. The splenectomized animal when given a hemolytic agent shows a resultant much more severe anemia, which is repaired much slower than in the normal animal. This condition may have its analogies in man.

It is a well-demonstrated fact that after splenectomy the red blood cells become much more resistant to hemolysis. Thus, when the cells of a splenectomized animal and of a normal animal are subjected to hypertonic salt solutions of varying strength and to hemolytic serum, it is found that hemolysis occurs to a greater extent with the red blood cells of the normal than with those of the splenectomized animal. One of the explanations advanced to cover this phenomena is that possibly the red blood cells in passing through the spleen are so influenced or affected that they succumb more readily to hemolysis. Also some workers have found that in an animal, after splenectomy cholestrin, an anti-hemolytic agent, is increased in the blood. Also, in hemolytic jaundice where the fatty acids, hemolytic agents, are found increased in the circulation, removal of the spleen causes a noticeable decrease in the amount of these.

The tendency of an animal to jaundice, following the administration of a hemolytic agent, is much decreased following splenectomy. The spleen does contain cells which destroy red blood cells. Is this lessened tendency to jaundice due to the fact that this broken-down material, in the absence of the spleen, does not reach the liver as directly as when the spleen is intact? It is known that normally it is conveyed from the spleen directly to the liver via the portal vein. In the liver it is manufactured into bile, jaundice developing when a superabundance of material is presented to the liver. In this regard it was found that when hemoglobin is injected into the femoral vein much more of it is excreted by the kidneys than when it is injected into the mesenteric vein, a branch of the portal system.

It is commonly believed that following the removal of the spleen there is hyperplasia of the lymphoid tissue. There may be some increase in the tissue, but there is no definite increase of the true lymphatic cells. After splenectomy these cells are found in the peripheral sinuses filled with red blood cells. They evidently take on the function of blood destruction. The same is true of the endothelial cells of the liver. Both of these sets of cells, however, function to this end only in times of stress, for example, when the circulation is subjected to the action of a hemolytic agent.

It is also a popular notion that following splenectomy there is a hyperplasia of the bone marrow. This, too, is erroneous, in so far as a hyperplasia of this tissue is associated with any improvement in the blood picture after splenectomy. The hyperplasia which does ensue does not develop for about a year and a half after splenectomy, too late to affect the blood picture, that is, to account for any improvement in it.

Experiments on the nitrogenous metabolism tend to show that there is absolutely no disturbance in this following splenectomy.

Relative to the indications for splenectomy, it is a mistake to do the operation in cases of pernicious anemia or in cases of congenital hemolytic icterus. The operation is more likely to be productive of good in chronic cases, where there is an anemia with rapid hemolysis, with jaundice and urobilin in the feces. Also, if reticulated cells of the bone marrow can be demonstrated.

H. T. Karsner, in opening the discussion, paid tribute to the high character of the work which the speaker reported. He had been associated with the speaker in the earlier stages of the research.

G. W. Crile asked the speaker what, after all, is the real function of the spleen?

G. N. Stewart repeated the preceding question. He expressed especial interest in the demonstration of the increased resistance of the red blood cells, following splenectomy.



R. M. Pearce, in rebuttal, said that if he knew the real function of the spleen he would not have gone into detail relative to the small amount of knowledge now available. He cited the custom of the Greeks, who were in the habit of burning out the spleen to increase the speed of their runners.

## **2. Presentation of a Case of Splenectomy, by R. W. Scott.**

The patient, a boy, was thrown from a bicycle about a year ago and sustained a blow in the left side. He walked to his home, complained of feeling bad, went to bed and was found later in coma. When the physician arrived he was pulseless, but the condition improved on application of stimulants. He was operated immediately. The red blood count, prior to operation, was 2,000,000. The spleen was found to be ruptured, and was removed. The boy made an uninterrupted recovery. He regained his strength gradually, but the blood picture improved very slowly. At present he is to all intents and purposes enjoying good health. It is interesting to note that in the past year he has grown 12 inches. The speaker was asked whether this unusual growth might be associated with the removal of the spleen.

R. M. Pearce, in answer, said that he had observed that animals following splenectomy had quite a tendency to become obese, but was not prepared to say what the etiologic factor was in the unusual growth mentioned.

---

## **EXPERIMENTAL MEDICINE SECTION**

The eighty-second regular meeting of this section was held in conjunction with the Alpha Omega Alpha Fraternity, Friday, May 14, 1915, at the Cleveland Medical Library, the Chairmen, T. Wingate Todd and V. C. Rowland, presiding.

The regular program follows:

### **1. Some Recent Contributions to the Physiology of the Stomach, by A. J. Carlson, Associate Professor of Physiology, University of Chicago.**

Work done by the speaker included determination of the motility of the empty stomach, investigation of the properties of the gastric mucosa and determinations relative to the secretion and chemistry of the gastric juice. A number of the experiments were conducted on dogs. Others were conducted on a man who had complete stricture of the esophagus and a gastric fistula after a large gastrostomy. The opening was into the lesser curvature of the stomach, and communicated with the exterior by means of a large rubber tube, about  $\frac{3}{4}$ -inch in diameter. It was thus possible, in this subject, to investigate the gastric mucosa directly, also the gastric secretion and juice.

For determining the motility a balloon was introduced through the opening of the fistula, into the stomach, the tube at the end of the balloon being connected with a manometer. At the same time plethysmograph tracings of the individual's arm were taken to determine what change, if any, were taking place in the vasomotor nervous system. In other experiments normal dogs and men were used, the balloon being swallowed.

It was found, relative to the movements of the empty stomach, that they consist essentially of a systole followed by diastole. With a strong tonus the stomach practically is in tetanus. There is nominally a definite period of contraction followed by a period of relaxation. The wave of contraction, starting at the cardia, seems to sweep over the entire fundus simultaneously, the peristaltic rush, so termed. The rhythm of contraction in the new born is essentially the same as in the adult, with the exception that the period of rest is longer in the former as compared with the later. Every stomach during the contraction period is hypertonic. This occurrence was noted only in the dog. It occurs, however, without question in man.

The beginning of contraction of the empty stomach is coincident in time with the setting up of hunger pain. Contraction in the empty stomach may be started by slightly inflating the balloon within it.

The reflex phenomena which accompany contraction, such as mental restlessness, inability to concentrate, feeling of weakness and vasomotor disturbances, are interesting and are proven. The knee jerk was used as the index of excitability of the spinal cord. When elicited at the acme of the hunger pain it was found to be greatly increased, thus showing the high excitability of the cord. If the individual is quiet, associated with the contractions is usually a mild vasomotor relaxation, although there may be constriction. Vaso dilatation is the usual phenomenon, however. It occurs even when the subject is asleep, so that it is a subconscious reflex. The sensations produced by the contractions of the empty stomach are not due to stimulation of the nerve endings of the gastric mucosa by pressure, for these nerve endings are of a different sort. Temperature stimulation of the mucosa is true stimulation. The mucosa has true protopathic sensibility. Further, when food is put into the mouth the gastric contractions cease, for the stomach must be dilated to receive it.

It was prophesied by Cannon that the existence of a psychic gastric tonus would be discovered, just as the psychic gastric secretion. If so, this would induce hunger contractions. The reverse, however, is true. Therefore, when food is in the mouth the stomach should be dilated to receive it. This is logical.

The chemical condition of the mucosa should stimulate hunger. Thus, anything producing a temporary inhibition. The gastric juice is secreted by the digestive movements, yet it inhibits them. This seems strange. Both acids and alkalies have this faculty. This same inhibition is produced by stimulation of the duodenal mucosa in dogs. This same phenomenon is probably true also of man. In all the experiments which can be duplicated on man, as well as on the dog, they check. Of the psychic processes, depression is the only one causing inhibition.

After section of both vagi there remains persistent contraction of the stomach. There is a persistent hypertonus with a slow rhythm of contraction. Thus, this activity is not due to stimulation of the sensory nerves of the esophagus, mouth or stomach. Like the heart, the stomach activity is independent of extrinsic nerve supply.

Relative to the influence of the blood it has been found that transfusion of blood from a starved animal into a normal animal caused the stomach to go at once into incomplete tetanus. It exerts a great pressor action. With transfusion of blood from a normal animal there is only a very slight effect. It has also been observed that after hemorrhage the tonus of the stomach is enormously increased.

Inhibition of the stomach movements by stimulation of the mucosa is strong with the nerves intact, but much weaker when they have been cut. It has been said that hunger sensations disappear after the first four or five days, following absolute starvation. In the dog, however, they are found to be normal or increased at the end of the fifth day. On the tenth day the dog went into complete tetanus. This is observed even if the stomach is isolated from the central nervous system.

The sensation of hunger easily blends into nausea. On smoking a cigar there is an inhibition of hunger. Also by tightening one's belt the sensation can be inhibited.

The effect of increased oxidation on the movements of the stomach are interesting. So, when the dog is running, the movements of the stomach are inhibited. Afterward the movements are observed to be increased. Therefore, an animal running after its prey is not urged forward by sensation of hunger.

Stimulation of the cold nerves of the skin with ether caused no effect on the gastric contractions in the dog. In man they caused inhibition, only, however, when the stimulation became uncomfortable. After several hours in such cases the contractions were much increased.



In parathyroid tetany, the contractions of the stomach were observed to be decreased, there being nothing to show the existence of a gastric tetany. In pancreatic diabetes there is an increase in the tonus of the stomach and in the contractions. These may be actual hunger contractions. These hunger contractions increase so that even when the animal is so far gone that it cannot chew, it will grab meat and hold it in its teeth.

Are gastric tonics effective in stimulating the hunger mechanism? Not in therapeutic doses. Their effectiveness increases in proportion to the amount given and to their bad taste. The bitters are just as impotent in cachectic animals as in normal ones. This fact is shown by experiments.

In pylorospasm there is a great increase in the rate and intensity of the contractions of the stomach. Pylorospasm may be a local expression of a general raised excitability of the gastro-intestinal tract.

G. N. Stewart, in opening the discussion, called attention to the far-reaching character of the work reported. America has taken a prominent part in research on the stomach. He asked whether, after a period of inhibition of the stomach contractions, it were not possible for there to be an increase in the hunger contractions, the mucosa of the stomach, so to speak, saving up the stimuli received?

Torald Sollman called attention to the point made by the speaker that inhibition of contraction is explained on the basis that when food enters the mouth the stomach dilates to receive it. Further, the purpose of the contractions is accomplished as soon as food is taken. It is possible that negative results achieved with the use of bitters were due to the acute nature of the experiments. Thus, it might be that their effects become apparent only after the bitters have been taken for some time. The stomach may become educated to it as a signal that food is about to be given.

E. D. Rosewater made the point that habit calls for food at definite times, although the cells of the body themselves are not hungry. When food is taken the hunger is immediately satisfied, although the added nutrition does not reach the cells for some time thereafter.

A. J. Carlson, in rebuttal, said that he had no evidence of the stimulating after-effect of bitters. The chemistry of the bitters themselves speaks against there being such action. It is possible, however, that this is a factor. They cause, however, little change in the secretion of gastric juice.

It is important to remember that a central neurosis may have its origin in the stomach. The mucosa is capable of differentiating heat from cold.

Habit is to a certain extent a factor in hunger. However, although certain conditions associated with meals direct attention to the stomach, they do not augment the contractions but merely permit them to enter consciousness.

---

## CLINICAL AND PATHOLOGICAL SECTION

The one hundred and ninth regular meeting of this section was held Friday, April 30, 1915, at Cleveland City Hospital, the Chairman, S. J. Webster, in the chair.

The regular program follows:

### 1. Presentation of a Case of Hirschsprung's Disease, by S. J. Webster.

The other name for this disease is congenital idiopathic dilatation of the colon. The case occurred in a boy, aged 19. He had been uniformly constipated since infancy, although severer attacks, at three-month intervals, were interpolated in the course of the disease. The symptoms during one of these attacks were so severe that the patient was operated for intestinal obstruction.

The patient's chest has assumed a barrel shape, and he is dyspnoic. An X-ray of the colon and sigmoid shows the large size of both, the colon markedly encroaching on the thoracic space.

**2. (a) Presentation of a Case of Multiple Myeloma, with Radiographs, by H. A. Becker.**

The patient was a woman, aged 68, who entered the hospital during February, for fracture of the left femur. She complained of pain in the left leg and pain in the abdomen, at night. Early in February she had twisted her leg, had sudden pain in the thigh and fell to the floor. Later a swelling appeared over the right eye. It was not painful except on slight pressure. It has become about the size of an egg. There are a number of large veins over it and on auscultation a murmur can be heard, synchronous with the heart beat. Nodules also appeared on the end of the left clavicle and on a number of ribs. In addition, the vault of the skull is diffusely involved.

The pathology of the case consists essentially of an invasion of the bone marrow with granulomatous tissue. The Bence-Jones reaction, distinctive in such cases, was strongly present. However, it is essential to note that here, as in all cases, the reaction did not become positive early enough in the course of the disease to allow of treatment.

When one nodule only is present, and is still confined to the bone marrow, one can go in, curette, and chisel away the necrotic bone, with a good chance for cure. When once the growth has involved the soft tissues however, and has become multiple, treatment is of no avail.

**2. (b) Presentation of a Case of Jacksonian Epilepsy, by H. A. Becker.**

The patient was a young man whose epilepsy developed immediately following a motorcycle accident in 1911, when the patient's head was injured and a large depressed fracture inflicted. The convulsions started in the fingers of the left hand and soon became multiple. They occurred on an average of once per week. The patient's depressed fracture was treated, with no improvement. Later a silver plate, then a celluloid plate, was introduced, but the wound became infected and each sloughed out. Later a plastic operation was tried, but the convulsions became worse.

The patient came under the writer's attention in 1913. The area of injury was thoroughly opened up, all of the adhesions separated, and a large strip of fascia lata from the thigh placed under the dura. The dimensions of the strip were 6x8 inches. Since operation the patient has had only 4 convulsions, 5 months apart, and these have been of an extremely mild type. Success in such cases is due to the fact that the fascia lata, as is well known, does not contract adhesions.

**3. (a) Presentation of a Case of Radical Operation for Epithelioma of the Face, by O. A. Weber.**

The patient, an elderly man, had an extensive epithelioma of the face, which seemed to be in a quiescent stage, and it was thought advisable to attempt to cover it over. Preparatory to operation the patient's left eye was enucleated. At operation a flap was dissected from the scalp, in the pedicle of which was the temporal artery. This flap was transplanted, and the denuded area on the scalp was covered with skin grafts from the thigh.

The graft took well, in both cases, and the area is completely covered over save for several small draining sinuses. The ultimate outcome in the case is problematic, but the patient is doing well.

**3. (b) Presentation of Two Cases of Trifacial Neuralgia, by O. A. Weber.**

One of the cases was in a woman, the other in a man, both of about the same age. The duration of each case was 4 years. Each gave a history of having caught cold. In both cases the branch involved was the third division of the fifth nerve.



The man was injected 6 weeks ago with a solution of 80 per cent alcohol and 1 per cent novocain. Injection was made directly into the nerve, as near as possible into its peripheral origin. The woman was injected several days ago. Relief from suffering was experienced in both cases.

The technic in making such injections is first to find a point  $1\frac{1}{2}$  c.m. anterior to the tragus and just below the zygoma. The needle is inserted inward at this point until one strikes bone. The needle is then withdrawn slightly and reinserted down and back. Proof that one has struck the nerve itself is obtained from the fact that, if so, there is the establishment of an immediate anesthesia which persists. The persistence of the anesthesia is from 6 weeks to 2 years. The other treatment is the Gasserian ganglion operation, but local treatment, if successful, is preferable.

### 3. (c) Presentation of a Case of Injury to the Spinal Cord, by O. A. Weber.

The case was that of a man who 4 years ago was injured when a pile of lumber fell upon his back. Immediately following injury the patient was paralyzed from his waist down. After being in bed for 8 months the motor paralysis cleared up, but the sensory paralysis has persisted.

There is still some slight impairment of the motor function. The cremasteric reflex is present, however, since it is innervated from the lumbar cord. The sphincters are paralyzed, involuntary defecation occurring when the patient's stools are liquid, although he can control them when solid. Erection is also not as good as formerly, due perhaps to impairment of the erector penis muscle. Also, the patient is not able to expel the last drop of urine, due to impairment of the accelerator urinae muscle.

The patient is completely anesthetic to touch over the distribution of the first, second and third sacral nerves. X-ray shows an old injury to the first lumbar vertebra. It is interesting to note that the patient entered the hospital recently to have a number of burns treated, which he had contracted over the anesthetic area from contact with a hot steam pipe.

### 4. Effects of the Anti-Narcotic Law in Cleveland—Analysis of Cases of Drug Addiction Treated in the Observation Department of the Cleveland City Hospital, by H. H. Drysdale.

Something less than 100 cases were under observation and treatment by the writer. Most of the patients were chronic addicts. The oldest person treated was a maiden lady of 68, the youngest a boy, aged 18. The drugs used by the addicts were the usual ones, morphin being in the majority. All of the patients were cured, with the exception of 8 who escaped from detention, and the maiden lady of 68, in whom complete withdrawal produced untoward symptoms.

The writer emphasized that a cure, clinically, in such cases, falls far short of being a cure in the sense that the patient will never again use the drugs to which he has been addicted. As a matter of fact, study of such cases from a psychological standpoint shows that the drug addict is generally a person lacking in stamina and control, and previous addiction of such individuals to drugs naturally tends to produce a lessening of their already low resistance in these regards. When times of stress come the cured addict will be strongly tempted to seek solace in his drug, and to the end of combating this, needs help of friends and society in general.

The method of treatment pursued in such cases consisted merely in removing the drug as rapidly as conditions warranted. Results obtained at the institution measure up well with results obtained at institutions which have specialized in this form of treatment.

**5. (a) Presentation of a Case of Complete Heart Block, by E. P. Carter.**

The patient was a woman, aged 58. Her first attack came at the age of 56. There was no history of lues or rheumatism in the case, these being the two great causes of disturbed conduction. The patient has had twelve attacks, unconsciousness supervening and persisting for many hours, in some of the attacks. The case is unusual, both from the standpoint of the late onset, which is against the rule, and from the standpoint of the long duration of unconsciousness, which is of rare occurrence in this condition. It is due to disease of the bundle and to myocardial change.

The explanation of the attacks is made on the basis that while the mass movement of the blood at these times is sufficient to maintain life, it is not sufficient to maintain a functional activity of the higher centers of consciousness. The blood pressure in such cases consists of a high systolic and a low diastolic. It is curious to note, however, that the blood flow in these cases is almost normal. The patient has a negative Wassermann.

**5. (b) Presentation of a Case of Congenital Pulmonary Stenosis with Delayed Conduction Time, by E. P. Carter.**

The diagnosis in the present case was pulmonary stenosis with either a patent septum or a patent ductus arteriosus. The patient showed a marked cyanosis, clubbed fingers and toes, a pigeon breast, Darwinian tubercle, extremely high palate, thickened extremities of the radius, ulna, tibia and fibula. He also showed a polycythemia and a loud systolic and diastolic murmur. There was also delay in conduction time between auricle and ventricle. The case represents the first grade of heart block.

V. C. Rowland, in discussion, called attention to an autopsy which he had done in a similar case on a child, aged 5. The aorta and pulmonary arteries were found to be fused into one vessel. However, the child during life had exhibited no cyanosis and no murmurs were demonstrable. The heart walls were found to be much thickened, the wall of the right ventricle, contrary to the usual condition, being found to be as thick as the left, since both were pumping against the same obstruction. This child had a broncho pneumonia and a vague emphysema. The digestion was normal but the child failed to gain. The latter point is a valuable aid to diagnosis in these cases.

**5. (c) Presentation of a Case of Prepatellar Luetic Bursitis, by R. W. Scott.**

The patient, a woman, aged 33, with no luetic history, came into the hospital with paranoic delusions. She also exhibited bilateral enlargement of the prepatellar bursa. This enlargement was of two years' duration, was painless and not tender on pressure. The parts were freely moveable and there was no edema or free fluid. The patient was placed on anti-syphilitic treatment and the size of the bursae has markedly diminished. A portion removed from one of the bursae for examination showed a well-developed gumma.

**6. Presentation of Three Cases of Sclerosis, by L. R. Ravitz.**

All of the cases showed increased spasticity of the extremities, difficulty in walking, increased reflexes, ankle clonus, Babinskis, with no sensory disturbances.

The first patient was injured by falling from a scaffold. He had paralysis of both lower extremities and was diagnosed as a case of transverse myelitis. He was given anti-syphilitic treatment, without benefit. He has developed a tremor when he moves. There is a slight myasthus, but the speech is good. He has been diagnosed as a case of multiple sclerosis.



The second patient was also given a course of anti-luetic treatment, without benefit. He was diagnosed as a case of sclerosis.

The third patient showed marked atrophy of his shoulder girdle and hands. He was diagnosed as a case of amyotrophic lateral sclerosis.

**7. (a) Presentation of Two Cases of Mercury Poisoning, by W. C. Gill.**

The first case, a pregnant woman, was given a total of nine-tenths of a grain of biniodid of mercury. Prior to that time, when 7 months pregnant, she had been given a total of 5 grains of gray oil, intramuscularly. She showed, after administration of the biniodid, marked salivation, ulceration of the soft palate and casts in the urine. She was delivered of a healthy child, and since delivery her condition has become slightly better. The ulceration is not extending and the urine has become slightly freer from casts. In administering biniodid of mercury it should be remembered that this is the most insoluble form of the metal, and the urine should be examined frequently for evidence of irritation to the kidneys.

**7. (b) Presentation of a Case of Secondary Syphilis, by W. C. Gill.**

The case, one of acquired syphilis, occurred in a little girl. The eruption which appeared was first diagnosed as a seborrheic eczema. The eruption was general, the skin was harsh, and showed a general folliculitis. The sheen of the skin resembled that in lichen polaris. The child in addition had a bilateral iritis, and gray patches on the tonsils.

**7. (c) Presentation of a Case of Bromid Rash, by W. C. Gill.**

The patient, a woman, came into the house with two large ulcerated areas on the lower legs. The lesions markedly resembled those due to syphilis. It developed, however, that the eruptions were due to the taking of large doses of bromides.

**8. Report on Further Work on Yeast Infections of the Lung, by S. A. Cleaveland.**

During the present investigation 150 sputa were examined. All of these specimens were from lung cases, and the presence of the yeast organism was demonstrated in 7 cases. In one of the cases a different organism was isolated from that present in the cases reported by the writer previously.

Injection of the organisms into stock animals showed the development of typical lesions and death in variable lengths of time.

**9. Report of Autopsy Findings in Three Fatal Cases of Mercury Poisoning, by M. B. Magoffin.**

The first case was recently confined and delivered of a still-born child. After leaving the hospital she was given gray oil, daily, intramuscularly, in the usual dosage. When she re-entered the hospital she was in a moribund condition. The body at death was found to be rather emaciated, and the abdomen on section contained 150 c.c. of yellow fluid. The walls of the colon were enormously thickened, while the last two feet of the ileum were extensively ulcerated. The kidneys were large, pale and flabby.

In the second case, death, in which followed the taking of seven tablets of bichlorid of mercury, the chief lesion was in the stomach, the kidneys being much the same as in the first case.

The third case was much like the first two.

---

**OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL  
SECTION**

A special meeting of the section was held at the Cleveland Medical Library on May 10th, to listen to an address given by Mr. Poser, of the Bausch & Lomb Optical Co.

The meeting was called to order at 8:30 P. M., the Chairman, Doctor J. E. Cogan, in the chair.

#### PROGRAM

Mr. Poser read an interesting paper on recent advances in the improvement of lenses to avoid their spherical aberration toward the periphery. The new forms of lenses, called punktal and katral, were described.

The essential difference between the punktal lenses and the older meniscus and toric lenses is that one surface of the older lenses is ground to a constant base ( $-6.0$ ,  $-9.0$ ), while the punktal has a special curve for both surfaces for each power. The punktal lenses range from  $+7.0$  D or  $-7.0$  D. For powers above  $+7.0$  D or  $-7.0$  D, the katral form is used. These lenses have special surfaces for each power and the radius of curvature of the peripheral portion of the lenses is increased sufficiently to overcome the spherical aberration.

Mr. Poser also exhibited a new instrument for reading the strength of lenses and one for getting an accurate measurement of the pupillary distance; also an instrument for reading the distance between the cornea and the surface of the lens worn.

Members present were: Doctors J. E. Cogan, Lauder, Metz, Wolfenstein, Mussun, W. C. Tuckerman, W. H. Tuckerman and Doctor Arthur J. Hill, of Canton.

---

#### COUNCIL MEETING

At a meeting of the Council of the Academy of Medicine, held Wednesday, May 12, 1915, at the Bismarck, the following members were present: The Second Vice-President, Doctor W. H. Weir, in the chair; Doctors Moorehouse, Houck, Follansbee, Thomas, Sawyer, Taylor, Yarian, Storey, Perkins, Ford, Cogan and J. E. Tuckerman.

The minutes of the last meeting of the Council were read and approved.

A communication from the American Red Cross Association was read. On motion, the President was requested to appoint an advisory committee, as requested in the communication, this committee to consist of five members, of which the President and Secretary are ex officio two; three others to be appointed. This committee acts merely in an advisory capacity upon work referred to it by the Committee on Red Cross Medical Work of the A. M. A.

On motion, the following were elected to membership in the Academy: Active Membership:—B. I. Brody, L. S. Brookhart, Robert Clarke, N. L. Coy, A. N. Dawson, E. W. Garrett, Otto L. Goehle, W. C. Greenwald, Jerome A. Heath, Frank J. Kern, Hubert C. King, L. S. Krauss, Leon B. Lemon, Abraham Strauss. Associate Membership—Bradley M. Patten, Ph. D.; Weston A. Price, D. D. S.; Chas. K. Teter, D. D. S.; Wm. C. Teter, D. D. S.

On motion the following names of applicants for active membership were ordered published: Alfred S. Anderson, J. H. Dempsey, E. E. Kepner, E. P. McNamee, M. J. Miller, Geo. P. O'Malley.

On motion by Doctor Ford the President of the Society was directed to appoint a committee, of which the President and Secretary shall be ex officio members, to make arrangements for the meeting of the Ohio State Medical Association, to be held in Cleveland next year.

On motion the Council ruled that Doctor E. P. Carter was on the non-active list and could be transferred to the active list upon his request.

Adjourned 1:00 P. M.



## BOOK REVIEWS

**Therapeutics of the Circulation.** By Sir Lander Brunton, M.D., D. Sc., et cetera, Consulting Physician to St. Bartholomew's Hospital. Second Edition, with illustrations. Paul B. Hoeber, 67-69 East 59th street, New York. Price, \$2.50 net.

This is the second edition of Doctor Brunton's work, the first having been issued about ten years ago. The new matter now introduced represents the advance along these lines since that time, rendering the present edition essentially a new treatise on the subject. It really embodies more than the title implies, as both the physiology and pathology of the circulation are amply considered; these cover fully one-third of the work, the therapeutic portion comprising the remainder of the nineteen chapters included. Those upon the treatment of symptoms and on the action of drugs are especially satisfactory; in fact, the thoroughly practical character is evident throughout the book. The volume is neatly bound, of convenient size, and a valuable contribution to rational therapeutics.

J. B. McG.

---

**Better Cancer Statistics**—Some time ago the U. S. Census Bureau arranged to publish a special report analyzing the mortality statistics of cancer for the U. S. Registration area during the year 1914. At a meeting held last week under the auspices of the Committee on Statistics of the American Society for the Control of Cancer, forms of tables proposed to be used by the Census Bureau in this work were carefully examined and, with only a few minor alterations, were heartily approved.

The Census Bureau is now sending some 30,000 or 40,000 letters to physicians in connection with the general improvements of cancer mortality statistics in this country. This seeks to classify the cancer mortality returns into two groups, those in which the diagnosis was based on clinical findings merely and those in which the diagnosis was confirmed by the autopsy or in which a surgical operation was performed. Moreover, accurate information is asked concerning the seat of the disease.

It is clear that such a study will do much to improve the statistics concerning cancer, and that it will be of incalculable value to students of this baffling malady.

---

**Health Center in Buffalo**—The Philadelphia Health Center plan, which involves the extension of the ordinary activities of the infant welfare station to include intensive work upon all the health problems of a defined area is to be tried out in Buffalo. The free milk dispensary at 1067 Grant street is to be the center of the work which is to be in charge of a newly organized Buffalo Federation for the Promotion of Public Health. There will be special standing committees at the center on domestic science, little mothers' leagues, obstetrical clinics, district nursing, medical inspection, food and sanitation, housing, streets and social service. Sanitary Supervisor Clark and Mrs. Carter of the Public Health Nursing service of the Department, have assisted in promoting this important organization.

## MEDICAL NEWS

**Babies' Dispensary and Hospital Post-Graduate Course for Physicians.**—(A) Infant Feeding, Disturbances of Nutrition and the Common Diseases of Infants and Children. By H. J. Gerstenberger, H. O. Ruh, and O. L. Goehle.

(B) The Preparation of the Various Foods and Food Constituents Used in Infant Feeding and Disturbances of Nutrition, and also the Production, Shipping and Care of Milk from the Family to the Home. By H. J. Gerstenberger and C. W. Wykoff.

This course will be given at the Central Dispensary and the Out-Door Ward of the Babies' Dispensary and Hospital, 2500 East 35th street, Cleveland, Ohio, during the afternoons of week days, beginning with July 12th and ending, inclusively, with July 31st.

Part A will be given daily from 2 to 4 P. M., and includes lectures, clinics, and ward walks.

Part B will be given twice weekly, from 4 to 5:30 P. M., at the Milk Laboratory of the Babies' Dispensary and Hospital, 2500 East 35th street.

The course will be limited to a minimum class of eight and a maximum of twelve individuals.

The fee for the course will be twenty-five dollars, to be paid on or before July 10th.

Applications, with name, address and school of graduation, should be sent to the following address: The Babies' Dispensary and Hospital, Physicians' Post-Graduate Course, 2500 East 35th street, Cleveland, Ohio.

---

**Resolutions of the Milk Commission**—At a meeting of the Cleveland Milk Commission, held Monday, May 17th, the following resolutions on the death of Doctor Hunter H. Powell, former President of the Commission, were passed:

Whereas, it has pleased an all wise Providence to call Doctor H. H. Powell to his eternal reward, and

Whereas, Doctor Powell had served as a member of the Milk Commission since its organization in 1904, and was President of that body at the time of his death, and

Whereas, Doctor Powell had given liberally of his time and his wise counsel to the Commission and in aid of the movement for pure milk, in which he took a deep interest, be it, therefore,

*Resolved*, that the members of the Commission express their deep sense of personal loss by reason of his death, that these resolutions be incorporated in the minutes of this body, and that a copy be sent to his family, as a token of sincere sympathy in their bereavement.

Mr. Samuel Mather was unanimously elected the new President of the Commission.

---

**New Ordinance Providing Municipal Tuberculosis Nurses for Los Angeles.**—To the Honorable, the City Council of the City of Los Angeles, County of Los Angeles, State of California:

(This initiative petition received some 20,000 signatures, more than four times the required number, and passed at the June election, by a vote of 47,359 to 25,681. The ordinance was drawn and fathered by Doctor George E. Malsbary, the editor of the *Southern California Practitioner*.)

Whereas, New York City, with one hundred and sixty-five municipal tuberculosis nurses, has recorded a diminution in the number of cases of tuberculosis from 32,065 in 1910 to 22,752 in 1912; and a reduction in the death rate from pulmonary tuberculosis in Manhattan and the Bronx from 427 per hundred thousand in 1881 to 190 per hundred thousand of population in 1912, a reduction of 55 per cent; and



Whereas, the results obtained in New York City are ascribed largely to the employment of municipal tuberculosis nurses, in a communication from the General Medical Officer of the City of New York, Herman M. Biggs, dated December 18, 1913; and

Whereas, in the City of Boston, Massachusetts, "All cases of tuberculosis reported are visited by nurses—twenty-five in number—paid by the city, and it is rare there now to find a neglected or abandoned case, and there has been a diminution in the total number of deaths from tuberculosis and also in the case rate"; and

Whereas, the City of Baltimore, Maryland, with a force of seventeen tuberculosis nurses has secured a reduction in both the cases and deaths from tuberculosis, so that the Commissioner of Health of that city declares that their work shows the need of many more tuberculosis nurses; and

Whereas, the City of Buffalo, New York, with a force of seventeen tuberculosis nurses, feels the need of more tuberculosis nurses; and

Whereas, the City of Cleveland, Ohio, with fifteen tuberculosis nurses and a record of good results, declares the need of more tuberculosis nurses; and

Whereas, the City of Columbus, Ohio, has six tuberculosis nurses; and

Whereas, the City of Los Angeles, California, has only one tuberculosis nurse and has shown an increase of about fifty per cent in the reported cases of tuberculosis during the past year, and a large increase in the number of deaths from that disease; and

Whereas, the work in the eastern cities, above referred to, has shown that a visiting tuberculosis nurse cannot satisfactorily take care of more than one hundred cases of tuberculosis; and

Whereas, a recommendation similar to the following proposed ordinance, received the unanimous endorsement of the Nursing Commission of the city of Los Angeles, January sixth, 1914, and has been endorsed by many of the leading business men, firms and organizations paying taxes in the city of Los Angeles; therefore,

The following ordinance is hereby proposed, to be adopted by the City Council of the city of Los Angeles, or, if the same be not adopted by said Council, the proposed ordinance then to be submitted to a vote of the electors of the city of Los Angeles as provided in the Sections 198-a, 198-b, 198-c, 198-d, and 198-e of the Charter of the City of Los Angeles governing the initiative; to wit:

#### **An Ordinance Providing for the Employment of Municipal Visiting Tuberculosis Nurses**

Section 1. The Health Commissioner of the City of Los Angeles shall and is hereby empowered and directed to employ, in the name of and for the City of Los Angeles, municipal visiting tuberculosis nurses, in the proportion of one such nurse per one hundred reported cases of tuberculosis in the City of Los Angeles.

Sec. 2. The municipal visiting tuberculosis nurses thus employed by the Health Commissioner of the City of Los Angeles, shall be paid by the City of Los Angeles at the rate of compensation provided for Municipal Nurses in Section One of Ordinance Number 28, 179 (New Series).

Sec. 3. It shall be the duty of the municipal visiting tuberculosis nurses of the City of Los Angeles to visit professionally all reported cases of tuberculosis in the City of Los Angeles, excluding those under treatment in public and private hospitals or sanatoria, unless requested in writing not to do so by the patient or physician in charge.

Sec. 4. The Health Commissioner of the City of Los Angeles is hereby empowered to establish such supply stations as he may deem necessary from time to time for the professional use of the tuberculosis nurses provided for in this ordinance.

Sec. 5. The Purchasing Agent of the City of Los Angeles is hereby directed to purchase on requisition from the Health Commissioner such supplies as the latter may from time to time deem necessary for the professional use of the tuberculosis nurses provided for in this ordinance.

Sec. 6. The Health Commissioner shall divide the City of Los Angeles into appropriate sections or districts and shall assign one or more tuberculosis nurses to each and every section or district thus formed according to the number of cases of tuberculosis therein, exclusive of those under treatment in public or private hospitals or sanatoria.

The tuberculosis nurses shall be held responsible for their respective sections, but may at the discretion of the Health Commissioner be given work outside of the sections to which they are assigned.

NOW, THEREFORE, We the undersigned electors of the said City of Los Angeles, do hereby petition your honorable body to adopt the said ordinance for the City of Los Angeles, or, if the same be not adopted by Council, we hereby demand the submission of the said ordinance to a vote of the qualified electors of the said City of Los Angeles, in accordance with the sections of the City Charter of the City of Los Angeles governing the initiative.

---

**A Medical Center for New York—The Alliance between Columbia University and Presbyterian Hospital.**—The present great centers of medical teaching and research in the world are Paris, Vienna and Berlin. In this country important beginnings in modern organization and method have been made in only a few places, and American medical schools have developed their methods and systems of education for the most part without a proper association between the hospitals and the schools. This is pre-eminently true of New York, and in spite of the excellence of the College of Physicians and Surgeons and other medical schools and the several excellent hospitals, this metropolitan city has lagged behind in medical teaching and research, directly because that intimate co-operation and interdependence of medical school and hospital, on which this excellence depends, has been lacking.

In 1911, an intercorporate alliance was entered into between Columbia University and the Presbyterian Hospital which had in view a union of the two institutions through which the medical, surgical and pathological resources of the Hospital should be placed at the immediate disposition of the Medical School of the University and under its scientific and clinical direction, leaving, however, the control and management of the Hospital with its own Board of Managers, as heretofore.

The Medical School of Columbia University was established as the College of Physicians and Surgeons in 1807. It is consequently one of the oldest schools of medicine, as it is one of the best known in the United States. It has behind it the tradition of more than a century of honored scientific and philanthropic service, and its degree has been everywhere recognized as evidence of a professional education thoroughly adequate for the purposes of medical practice. The Presbyterian Hospital was founded forty-seven years ago for the reception of patients irrespective of creed, nationality or color. Throughout its existence it has advanced with the progress of medicine; it has remained faithful to the objects of its foundation, and it has gained for itself an enviable reputation as a progressive and well-managed institution that has played a leading part in the hospital service of the city.

The benefits of the alliance between the two institutions are in every sense mutual and cannot well be overstated in their extent and value. The Medical School, by this union, was placed for the first time in possession of clinical facilities, which it had lacked, commensurate with its own laboratory and teaching equipment and favorable to their proper expansion; and the experience of five years has demonstrated that the alliance is of inestimable value to the Hospital in promoting efficient care of the sick.

A hospital like the Presbyterian must actively and intelligently keep pace with the development of the science of medicine in whatever form or from whatever direction it may appear; it must always be ready and



willing to discard old and accepted conditions so soon as new and more approved methods have been devised to substitute for them or to improve them; and in equipment and service it must maintain a routine in which no effort is spared in the attempt to give the patient the benefit of every possible bit of evidence that may throw light on his illness and suggest plans for his cure. All this requires the ceaseless work of many men. Chemical and physiological studies with the use of instruments undreamed of a few years ago, bacteriological studies unimaginable even in the early days of this Hospital, all need the services of men who have been especially trained in these directions. Through the alliance with Columbia and its College of Physicians and Surgeons the best expert knowledge that can be gathered by the University from the whole country is pledged to the service of the Hospital. A medical school, in its turn, to secure proper educational efficiency must have in its teaching hospitals adequate opportunity for that direct study of the patient which is the all-important factor in the training of the intending physician. The alliance gives the Medical School, in abundant measure, and far beyond anything that is at present at hand in this city, the opportunity to bring the student into close and active relation with the patient, to his own advantage and to the advantage of the student as a future practitioner.

Prior to the death of its late President, Mr. John S. Kennedy, the Presbyterian Hospital had purchased property on the East River upon which to erect a new modern hospital, but later, upon entering into the alliance with Columbia University, it was found impossible for the College of Physicians and Surgeons to build adjacent to the hospital site selected and thus to bring about that proximity of the two institutions which is deemed by both to be essential to the attainment of the ideals contemplated in the alliance. For the execution of the plan there must be available sufficient land upon which to develop in the future, and to make provision for those numerous allied institutions and special hospitals that are now everywhere springing up as necessary parts of a well-rounded equipment for the scientific study of medicine.

### Site

An option has now been secured upon a commanding site at Washington Heights, approximately ten acres in extent, between Broadway and Fort Washington avenue, 165th to 168th streets, overlooking the Hudson River and the Palisades. The plot is situated on ground 185 feet above the river and is accessible to approach by the Broadway and St. Nicholas avenue surface line with its cross-town connections through 145th and 181st streets. A close connection with all parts of Greater New York is secured by a station of the Broadway subway directly in front of the northeast corner of the plot. This site measures 574 feet on the north, 778 feet on the west, 536 feet on the south, and 782 feet on the east. It affords an ideal situation for the proposed buildings: it is on high ground, it is well supplied with air and light, it is accessible to patients and to students, it is free from objectionable surroundings, and it will be adequate for the purposes intended.

The building of this proposed medical center will also add to the hospital facilities of the city a new hospital, which is much needed in this vicinity. The Upper West Side of the city has not been supplied either with the hospital beds or with the ambulance service requisite to care for that section in an efficient manner. The removal of the Presbyterian Hospital from its present location to the new site, accordingly, will secure to the city a much more effective distribution of hospital service.

The report of the State Charities Aid Association, issued in 1905, called attention to the lack of hospital beds on the west side of Manhattan as existing in 1905 and as probable for the year 1920. The greatest demand was in the Fort Washington district, where the lack of hospital beds was stated to be 254 in the year 1905, and the probable deficiency was placed at 781 for 1920. The building of the new Presbyterian Hospital

at the site selected will, therefore, fulfill the greatest need for hospital construction now existing in New York City. The same report emphasizes the advantages of building the new Bellevue Hospital with a capacity of 1,500 beds. It also advocates the construction of a second large hospital before the ideal plan of hospital organization for New York can be considered complete. There is no better site on Manhattan Island than the plot selected for such a hospital. It will give the Hospital more than twice the amount of land which it now occupies for its new buildings and for future extensions; and, while the hospital will be in a different locality, this very fact will extend its usefulness, which in no wise will be curtailed, since at the present time experience has proved that in its out-patient department over fifty per cent are patients coming from the city at large and not from the immediate district of the hospital itself.

The site proposed is large enough not only for the Presbyterian Hospital and the Medical School of today, but for all probable expansion, as well as for such allied hospitals and institutes as are either now in existence or are likely to be established. Notwithstanding the recent extraordinary advances in medicine and surgery, it appears to be the fact that we are as yet only at the beginning of what is possibly, particularly on the side of preventive medicine, sanitary science and public hygiene. A great medical school, a great general hospital, and a group of special hospitals and clinics would constitute an assemblage of allied undertakings that would be without its equal anywhere as a center of medical teaching, of medical research, and of medical influence.

### Buildings

A preliminary plan has been prepared for the development of the site in which the several units have been carefully considered in their relation to the completed whole. The plan calls for the immediate erection of several buildings. These include a building for administration; a building or buildings of much greater capacity than the present group on 59th street to house the medical sciences, the Crocker Cancer Research laboratories, and a School of Sanitary Science and Public Health; a building or buildings to house the Hospital, with an ultimate capacity for at least 1,200 patients; a building for the Vanderbilt Clinic, to serve also as the out-patient department of the Hospital; dormitories for the accommodation of at least 400 medical students, with an adequate dining-hall for both students and instructors; and a building to house a training school for nurses and to serve as the nurses' home. The plan also provides space for a possible building for the Sloane Hospital. A considerable portion of the total area is to be left for the present unoccupied for the addition of future institutes or foundations which may become necessary as the result of the development of medical science, or which may affiliate themselves with the Hospital and the University.

### The Medical School

The buildings of the new College of Physicians and Surgeons must contain all the departments which are now housed in the present building and in addition sufficient room for the permanent location of the George Crocker Cancer Research Foundation. In the present school in 59th street, only one department can be said to have a sufficient accommodation and even that is over-crowded, because of the very poor lighting and bad arrangement of the rooms assigned to it. The present school contains 116,000 square feet, or 2,059,000 cubic feet; the new school should be at least half as large again to provide for the present necessities which are lacking today in all laboratory departments, and a further 16,000 square feet, or 200,000 cubic feet, to provide for the new department of cancer research. If we are to include a department for preventive medicine and public health, a still further increase of about 16,000 square feet, or 200,000 cubic feet, would be necessary. It probably would not be too great a building for school purposes alone, to erect at the present time a building of 3,500,000 cubic feet for all the purposes indicated.



It may ultimately be found desirable to supply the necessary floor space by a sub-division into several buildings and to develop the school as made of separate institutes. At present a central building with executive offices and general lecture rooms and two laboratory buildings should suffice. One of these should be devoted to anatomy, physiology, chemistry and pharmacology, and the second to pathology, cancer research and the new department of sanitary science and public health.

### Vanderbilt Clinic

The Vanderbilt Clinic, which is part of the University's equipment, and is now an independent dispensary at 60th street and Amsterdam avenue, should be rebuilt as a part of the new hospital or in close proximity to it in order that it may become the out-patient department of the new Presbyterian Hospital. The clinic building at 60th street contains 52,140 square feet, or 543,970 cubic feet, and is at present badly cramped for space in every department. The recent addition of departments of visiting nursing and social service, the rapid development of the department for tuberculosis within the department of medicine, the needed addition of a department of dentistry and the demands of every existing department, would require a building increased by at least fifty per cent on the present size. A building of 80,000 square feet floor area, or 900,000 cubic feet, therefore, would be none too large for the out-patient department, which would be required for the care of the number of patients who would be attracted to it and for the teaching which it is necessary to do in such a dispensary in connection with the hospital and school. A recent experience of a sister university which has been overwhelmed by the size of the dispensary classes attracted to its new plant, both hospital and dispensary, shows the folly of underestimating the value of a teaching plant as an attraction to patients and in consequence of erecting too small a building for dispensary use.

### Sloane Hospital for Women

The Sloane Hospital has been developed to so high a grade of efficiency as to render it desirable to leave it in its present situation under conditions which will be acceptable to the managers of that institution. Land should be set aside and held vacant, however, for the future use of the Sloane Hospital in case it should ever be desired to move it to the new site.

### Dormitories

A students' dormitory, to be equipped with meeting rooms and library, with accommodations for at least 400 students, should be added to the buildings on the new site. Such a dormitory is needed by every medical school in the country and is possessed by none. A dining hall or commons should also be included, and would undoubtedly be found a popular addition, not only by students but by instructors as well.

### The Hospital

The plans under consideration by the management of the Presbyterian Hospital provide for a building designed to contain 650 beds. It will include the regular services for internal medicine and general surgery which form the basis of every general hospital. In addition, there will be eight separate ward services for special genito-urinary surgery, for orthopedic surgery, for diseases of the eye, ear, and nose and throat, for diseases of children, for diseases of the nervous system and for diseases of the skin, and a ward service for every department represented in the Vanderbilt Clinic, as well as 75 private rooms. The present buildings of the Presbyterian Hospital provide three services, those for medicine, surgery and diseases of children. The plans for the new hospital further provide a pre-arranged scheme for largely increasing the plant, if future needs should require it.

### Endowment

The College of Physicians and Surgeons is at present maintained at an estimated deficiency of about \$150,000 a year. A carefully prepared study of the needs for a new and urgently demanded department of sanitation and public health shows that for the purpose an addition is needed to the funds of the University to meet an additional annual expenditure of \$40,000. The College of Physicians and Surgeons has not been able during the last four years to increase its usefulness along many needed lines because of this lack of available revenue. Gifts have been made annually by the friends of several departments, but in order to assure the income received from such gifts, which are renewed annually only through the personal efforts of the teaching staff, and to provide still further for those additions to the work of the school which are urgent at the present time, at least another \$20,000 annually is required.

In addition, the Hospital will need sums sufficient to enable it to carry on the entire plant to its full capacity. The cost of hospital support is under-estimated in every hospital in the city. None of these institutions has increased the amount originally fixed for the endowment of a bed to a sum at all commensurate with the amount now required. The building of a 650-bed hospital involves a construction cost of \$3,250,000. If 575 beds are ward beds, an endowment of \$9,200,000 is necessary to capitalize the running expenses of the whole. The Presbyterian Hospital has an accumulated property value of about \$7,000,000. If this be applied to the development of the new site, \$1,000,000 must go for land, \$3,000,000 for construction of the 650-bed hospital, and \$3,000,000 will remain for endowment.

### Financial Summary

To provide for the new buildings and the site, and to carry into effect the realization of the plans for the proper equipment of the Medical School under the conditions indicated—to enable it, in short, to perform its full part in the alliance between the University and the Hospital in the proper and progressive development of medical education in the city and in the nation—the University must raise a total fund of no less than \$7,500,000, in accordance with the following schedule:

Estimated cost of new building for School of Medicine, including space for sanitary science and cancer research, 3,500,000 cubic feet at 50 cents....	\$1,750,000	
Estimated cost of rebuilding Vanderbilt Clinic, 900,000 cubic feet at 50 cents.....	450,000	
[Sloane Hospital is not included in the estimate.]		
New equipment, estimated.....	100,000	
	<hr/>	\$2,300,000
Estimated value of half of 59th street site; half being reserved for use of Sloane Hospital.....	300,000	
	<hr/>	
Net cost of new Medical School buildings and equipment.....		\$2,000,000
Estimated cost of new site.....		1,000,000
Estimated cost of students' dormitory, including dining hall....		400,000
Endowment for sanitary science and public health....	\$1,000,000	
For general endowment .....	3,100,000	4,100,000
	<hr/>	
Total to be raised by Columbia University.....		\$7,500,000



This is in addition to the sums needed by the Presbyterian Hospital to carry out fully its part of the proposed plan.

The alliance between Columbia University and the Presbyterian Hospital has opened a way to overcome the long-standing deficiency that has existed in both medical teaching and research. Since 1911, the problem has been studied in all its aspects and the University and the Hospital now join in submitting to the men and women of New York and of the nation a project for the development in New York of one of the world's greatest centers of medical teaching and research. The plan involves the establishment of a new, thoroughly modern and complete general hospital surrounded by a group of other special hospitals and clinics, as is the case in European cities, and also the rebuilding and equipment on the more highly approved plans and with adequate endowment, of the College of Physicians and Surgeons, which has for four generations trained so large a proportion of the leading physicians and surgeons of the United States. Both University and Hospital have turned aside from their own individual projects of enlargement and improvement, in order to unite in this new joint undertaking which may be made of such inestimable value to medical science.

**Letter to President Butler from President Pritchett of the Carnegie Foundation for the Advancement of Teaching**

New York, April 15, 1915.

Dear President Butler:

I wish to thank you for an opportunity to read the confidential statement of the Committee of Trustees of Columbia University concerning the proposed plan for developing a center of medical teaching, under university control, in connection with the Presbyterian Hospital.

My interest in the matter arises out of the studies which have been made by the Carnegie Foundation for the past five years in medical education. The project appears to me of such significance for the city and State of New York and for medical progress in the whole country that I desire to emphasize in every way possible its importance. In my judgment, there is no other field of university effort to which Columbia University can give itself which will so profoundly affect the interests of education, of science, and of the public health.

The reason for this can be told in a few words. Medical education and medical science in the United States have suffered serious harm in every way by reason of the fact that medical school, hospital (which is the laboratory of the clinician), and the university have not been rightly related. To bring out the best result, medical school and hospital must be hand in hand and both must be inspired with university ideals. It is just this object that is aimed at by acquiring now a sufficient tract of land and associating medical school and hospital under university auspices. To do this in New York will not only create a medical institution of the highest rank, but will improve more directly than can be done in any other way the medical conditions throughout the country. I regard the plan as one of the greatest to which a metropolitan university could address itself. There is no other service upon which Columbia could enter which would go further to make of New York a center of scientific and humanitarian enlightenment.

Yours most sincerely,

(Signed) HENRY S. PRITCHETT.

**Letter to President Butler from Doctor William Henry Welch, Baxley Professor of Pathology, Johns Hopkins University**

Johns Hopkins University, Baltimore,

April 23, 1915.

My Dear President Butler:

The large and far-sighted plan for medical teaching and research outlined in your letter and in the confidential report of the special committee

presents the most inspiring possibilities for advancement of medical knowledge and practice, for increase in the usefulness and renown of Columbia University and of the Presbyterian Hospital and for service in promotion of the public welfare.

Medicine can make today the strongest possible appeal for large financial support by virtue of its vastly increased and ever increasing power to preserve health and to control disease. Its scientific and humanitarian aims and accomplishments render its cultivation one of the worthiest functions of a modern university, and the hospital which shares in this educational work thereby serves the community most efficiently. The roots of research lie in the educational system, and both should be cultivated together. The contribution of medical science to the solution of great social and industrial problems of modern life is now widely recognized and is destined to be of the highest significance to the people.

Notwithstanding its good medical schools and hospitals, New York does not hold today the leadership in medical education to which it is entitled by its position, its size and its importance. The creation of a great center of medical teaching and research as a part of Columbia University in co-operation with the Presbyterian Hospital would secure for these institutions foremost rank in medical education, and would bring inestimable benefits to the city, the university and the hospital, and indeed to the whole country.

It would be a source of great rejoicing not only to the friends of Columbia University and of the Presbyterian Hospital, but to all interested in higher medical education and the advancement of medical science and art to witness the fulfillment of this well-considered, broad plan, looking as it does, with far-sighted vision, beyond the needs of the moment to a future of assured growth and development full of the richest promise of high usefulness.

Believe me to be

Very sincerely yours,

(Signed) WILLIAM H. WELCH.

---

**Warren Triennial Prize, Massachusetts General Hospital**—The Warren Triennial Prize was founded by the late Doctor J. Mason Warren in memory of his father, and his will provides that the accumulated interest of the fund shall be awarded every three years to the best dissertation considered worthy of a premium, on some subject in physiology, surgery or pathological anatomy; the arbitrators being the Physicians and Surgeons of the Massachusetts General Hospital.

The subject for competition for the year 1916 is on Some Special Subject in Physiology, Surgery or Pathology.

Dissertation must be in either the English, French or German languages, and must be typewritten and suitably bound, so as to be easily handled. Work that has been published previously will not be considered in competition. The name of the writer must be enclosed in a sealed envelope, on which must be written a motto corresponding with one on the accompanying dissertation.

Any clue given by the dissertation, or any action on the part of the writer which reveals his name before the award of the prize, will disqualify him from receiving the same.

The amount of the prize for the year 1916 will be \$500.

In case no dissertation is considered sufficiently meritorious, no award will be made. Dissertations will be received until April 14, 1916.

A high value will be placed on original work.

FREDERIC A. WASHBURN,  
Resident Physician.



# The Cleveland Medical Journal

Vol. XIV.

JULY, 1915

No. 7

## SOME CONDITIONS AFFECTING THE TOXIC DOSE OF OUABAIN (STROPHANTHIN)\*

By TORALD SOLLMANN, M. D., from the Pharmacologic Laboratory  
of the School of Medicine, Western Reserve University

### Introduction

The digitaloid drugs and their preparations show naturally fairly wide variations of activity—a matter of serious import when it is remembered that they must often be used in large doses, approaching the toxic. Standardization of their pharmaceutical products is therefore highly desirable. Since they contain mixtures of active ingredients, chemical assay is out of the question. Bio-assays offer the only chance of success. Several such methods have been elaborated. Of these the “frog-method” is probably the best, from the practical standpoint, and will probably be incorporated optionally in the forthcoming Pharmacopeia. It determines the cardiac activity by comparing the dose required to produce the characteristic systolic cardiac arrest, with a standard preparation, such as ouabain (i. e., a crystalline strophanthin). This activity varies with the temperature of the heart. One of the objects of the following investigations was to determine this relation exactly, so as to add to the accuracy of the practical assay.

The scientific bearing of these data promised to be even more significant, namely, as a study of the influence of varying conditions on drug-action. Pharmacologic reactions are usually studied under comparatively uniform conditions. However, like chemical reactions, they are more or less modified when the conditions are altered. Such alterations, when they have been sufficiently studied, may throw some light on the intimate nature of pharmacologic actions. They may also help to explain and

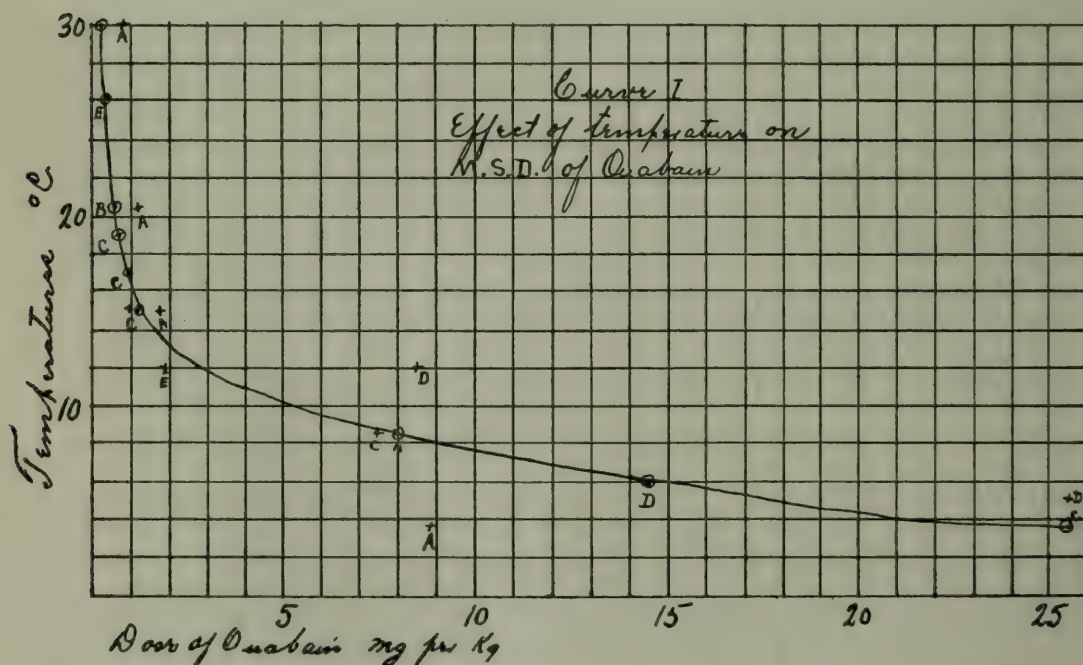
\*Adapted from an address to the Experimental Medicine Section of the Academy of Medicine of Cleveland, April 9, 1915, and from a paper appearing in the *Journal of Pharmacology and Experimental Therapeutics*, Vol. 6, pp. 533-560.

predict differences between the actions of drugs in health and disease. Before these applications can be made, it is necessary to have much more complete data than we possess at present. This investigation was undertaken primarily to furnish some quantitative data along this line. Ouabain was chosen because it is a definite substance, the actions of which can be studied quantitatively with very fair accuracy.

Two sets of experiments were made; one on intact frogs, by Mr. Stingel, of the Cleveland School of Pharmacy; the other on excised hearts, by Doctor Mendenhall, now of Dartmouth Medical School.

### I. *The Influence of Temperature on the Toxicity of Ouabain for Intact Frogs.*

The experiments consisted in determining the dose (M. S. D.) of ouabain which would just produce systolic arrest of the heart in one hour after it had been injected into the lymph-sac of intact frogs, the animals being kept at a desired temperature.



Curve 1. Effect of Temperature on M. S. D. of Ouabain. The crosses represent the data of the individual series; the circles show the position of the averages of all the series. One-hour intact frog method.

Curve 1 presents these data graphically. The doses arrange themselves in a parabolic curve, the increase of activity per degree of temperature being much greater at the lower than at the higher temperatures. This is in general harmony with the effects of temperature on biologic reactions. The relation of the temperature quotient will be discussed later.



The magnitude of the temperature-influence may be realized when it is noted that the activity is practically doubled between 15 and 20° C.; and between 10 and 15° the activity is increased fourfold. The temperature-factor is therefore too large to be neglected in the frog-assay of ouabain.

## II. *The Influence of Temperature on the Activity of Ouabain on the Excised Heart.*

The experiments on intact frogs, as just described, are complicated by possible differences in absorption, by the impossibility of controlling the temperature exactly, and perhaps also by central and non-cardiac actions. To avoid these complications, a series of experiments were made by exposing the excised hearts of (leopard) frogs to different concentrations of ouabain, at various temperatures; noting the time required to produce systolic standstill.

The method consisted essentially in tying a cannula into the ventricle of the excised heart. The cannula was filled with the desired concentration of ouabain, dissolved in Ringer's fluid, and the arrangement suspended in a moist chamber, kept at the given temperature, and supplied with oxygen. The time elapsing until systolic arrest of the ventricle was then noted.

Figure 2 (Curve 3) has been plotted from these data. It shows that the curve is of the same form as in intact frogs, for all concentrations.

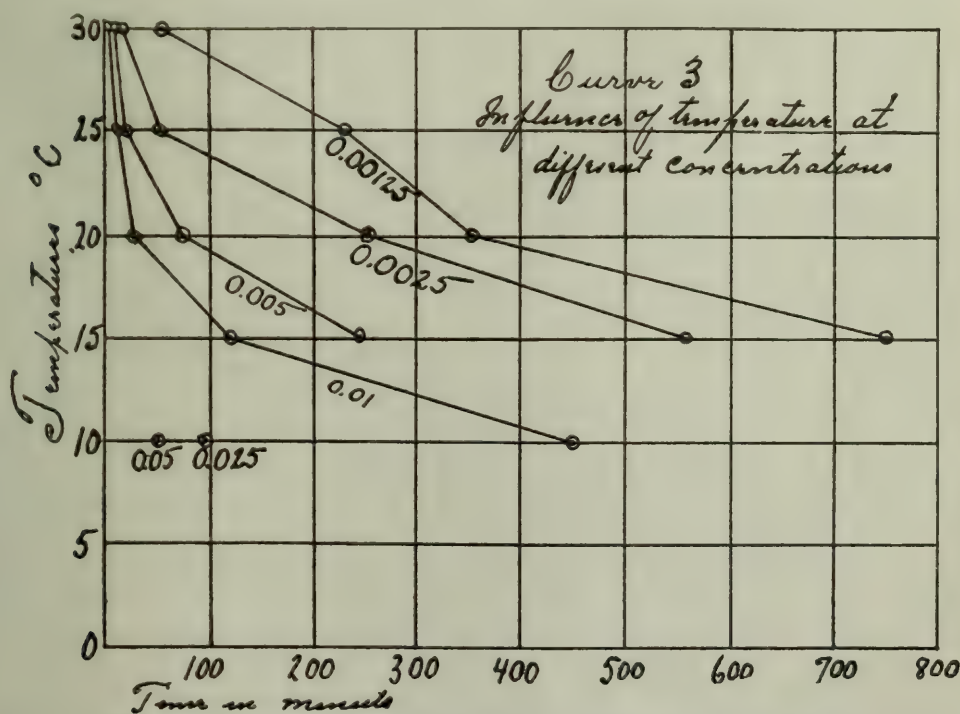


Fig. 2. Influence of Temperature at Different Concentrations. Excised frog hearts. The concentrations are indicated by the figures on the curves.

### III. *The Temperature Quotients of Ouabain Action.*

A glance at figures 1 and 2 shows that the activity of ouabain increases with the temperature as a parabolic curve, and not as a straight line; and that the increment is the greater, the lower the temperatures which are being compared. This is in general agreement with van't Hoff's law of the influence of temperature on chemic reactions, and with its application to biologic phenomena, as illustrated by Snyder and others. The comparison with the influence of temperature on the heart-rate is especially interesting.

These relations are best expressed by the "temperature quotient,"  $Q_{10}$ ; *i. e.*, the ratio of the activity,  $A_1$ , (*f. i.*, the heart-rate) at a given temperature,  $T$ , to the activity  $A_2$  at a temperature ten degrees lower:  $Q_{10} = \frac{A_1}{A_2}$  If intermediate temperatures are used they are reduced to the  $10^\circ$  basis, viz:

$$Q_{10} = \left\{ \frac{A_1}{A_0} \right\}^{\frac{10}{t_1 - t_0}}$$

Table I presents a summary of the essential results. The temperature quotients of some other biologic phenomena are also reproduced in this table to facilitate comparison.

TABLE I  
Summary of temperature quotients

$Q_{10}$ for Temperatures of	$\frac{35}{25}$	$\frac{30}{20}$	$\frac{25}{15}$	$\frac{20}{10}$	$\frac{15}{5}$	$\frac{10}{0}$
M.S.D. of ouabain, in intact frogs, 1-hour method (Stingel)			3.6	9.4	16.1	
Ouabain concentration required for systolic arrest of excised heart in given time—Average (Mendenhall)		4	4	7.1	11.7	
Time required for systolic arrest of excised frog heart with ouabain, 0.01 mg. per cc. (Mendenhall)		6.1	9.6	17.3		
Heart Rates of Cold-Blooded Animals:						
Isolated heart of turtle <sup>1</sup>	1.4	1.9	2.1	2.2	3.5	10.2
Isolated sinus venosus of frog <sup>1</sup>	(1.5)	1.6	2.1	2.6	2.9	(3.5)
Fundulus embryos <sup>2</sup>		1.7	2.2	2.8	3.0	
Amblystoma embryos <sup>3</sup>		1.8	2.1	2.6	3.1	
Average for heart-rate:	1.4	1.8	2.1	2.6	4.1	6.9
Nerve conduction, sciatic, frog <sup>1</sup>	1.5	1.8	1.8	2.3	2.7	(2.7)
Respiration of larvae of dragon-fly <sup>1</sup>	1.5	1.8	1.9	2.0	2.7	
Coagulation time of blood <sup>1</sup>	2.5	2.3	2.7	3.8	4.0	5.0

<sup>1</sup>Taken from Snyder, 1911.

<sup>2</sup>Loeb and Ewald, Bioch. Zs. 58:177/1913.

<sup>3</sup>Laurens, Am. J. Physiol., 35:199/1914.



The table shows that the quotient for ouabain obeys the same law as that of other biologic phenomena, i. e., it increases for lower ranges of temperature. However, it also brings out a fundamental difference, viz., that the quotients for ouabain are much greater than those for the heart-rate; in fact, that the *ouabain quotients correspond more nearly to the square of the heart-rate quotients*. This is shown in table II.

TABLE II  
Comparison of ouabain quotient and square of heart-rate quotient

Temperatures :	$\frac{30}{20}$	$\frac{25}{15}$	20 —	$\frac{15}{5}$
Average of three ouabain qu- otients of Table I	4.1	5.7	11.3	14.4
Square of heart-rate quotients	3.24	4.41	6.76	16.81

This is an apparent exception to van't Hoff's law that  $Q_{10}$  for chemical reaction lies between 2 and 3; and this might be taken to indicate that the action of ouabain is not chemical. In fact, however, the discrepancy can be explained on a simple basis, and becomes really a confirmation of the law; namely, on the basis of Weizsaecker's observation that the activity of ouabain is proportional, independently, to two factors, viz., the heart-rate and the temperature. Increase of temperature would therefore increase the ouabain action, not only directly, but also because it increases the heart-rate.

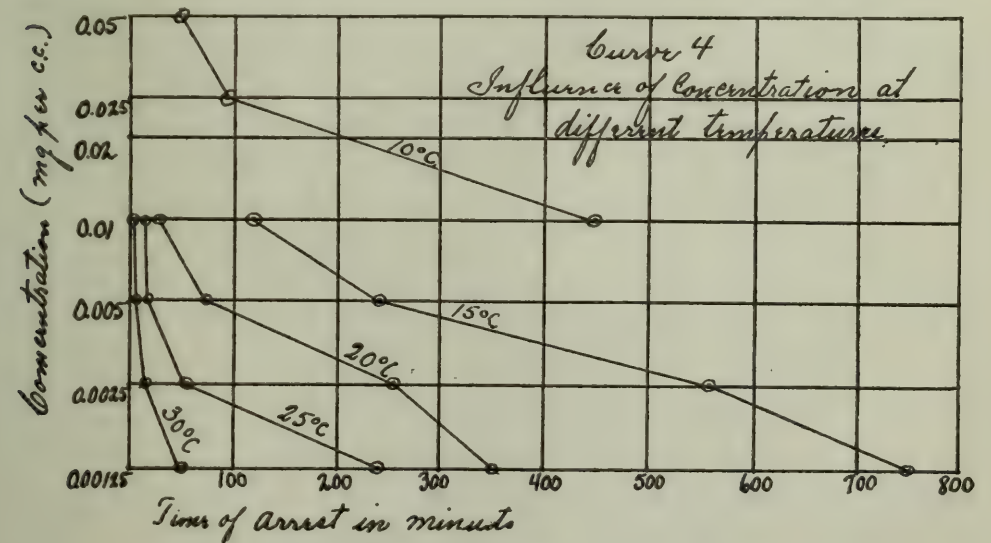


Fig. 3. Influence of Concentration at Different Temperatures.  
Excised frog hearts.

IV. *The Relation of Concentration and Action.*

The data of Mendenhall lend themselves well to the study of this relation. This is presented as curves in figure 3, in which the concentrations are arranged in geometrical progression, the activity in arithmetical series. The curves are essentially symmetrical, so that the influence of concentration is similar, whatever the temperature. It is also seen that the increase of activity with concentration is generally greater at the lower than at the higher concentrations.

For detailed study, the relation may be expressed more conveniently by the increase of activity on doubling the concentration.

Let  $A$  and  $a$  = activity;  $C$  = concentration; and  $K$  the concentration coefficient of activity (i. e., the factor by which the concentration must be multiplied to give the activity); then

$$\frac{A \text{ at } 2C}{a \text{ at } C} = K$$

A coefficient  $K=2$  means that the activity increases in simple geometrical ratio with the concentration; a smaller coefficient, that the activity increases less rapidly; a higher coefficient, that it increases more rapidly than the concentration. With  $K=1$ , the activity would remain unaffected by the concentration.

The quotients have been calculated and tabulated in the original paper, but it seems unnecessary to reproduce these tabulations here. It may suffice to quote the conclusions:

1. The coefficient ranges from 1.28 to 4.59, average 2.5; i. e., the activity may increase less, but generally increases more than the concentration.

2. The coefficient increases progressively with:

(a) The lowering of the concentration (i. e., it is higher for

$$\begin{array}{ccc} 0.0025 & & 0.01 \\ \hline & \text{than for} & \\ 0.00125 & & 0.005 \end{array}$$

(b) The lowering of the temperature (i. e., it is higher for 20° than for 30°).

(c) The time required for cardiac arrest (i. e., it is higher for 51-253 than for 6½—16 minutes).

These tendencies can be reduced to a common basis, viz.: *The feebler action of the ouabain, the more it is increased by doubling the concentration.*



The progressive increase of the quotients for lower concentrations is a common phenomenon in the relation of response to strength of stimuli, in general: "For a large number of living systems, there applies the rule—within certain limits—that with equal increments of stimulation-intensity, the quantitative response increases at first more rapidly, then progressively more slowly." (Verworn, *Erregung und Laehmung*, 1914, p. 43.)

However, the rule is not an explanation; nor does it cover the increase of the quotient with lowering of temperature and time of exposure.

At least four factors suggest themselves as being especially concerned in the explanation, viz.: the limit of response; the "inactive dose"; the maximal effect; injury of the heart by exposure; and penetration of the ouabain. They may be discussed seriatim.

*The limit of response.* The response of a tissue to stimulation is limited by a certain maximum, beyond which further increase of concentration would produce no further increase of response; i. e., the coefficient would be and remain 1. Balanced reactions in general slow progressively as they approach their maximum. This would explain that the coefficient decreases with the intensity of action; it would explain particularly the fall of the coefficient below the value of 2 (i. e., the value which would exist if the activity was strictly proportional to the concentration).

*The "inactive dose."* A stimulus must reach a certain strength (the threshold value) before any effect is manifest. This inactive concentration ( $z$ ) would be the same whether the final concentration be high or low. It would, therefore, have a higher ratio to the lower than to the higher concentration.

For instance, let  $z = 1$ ; then:

With the *apparent concentrations*

$$\text{of } \frac{4}{2} = 2;$$

With the *apparent concentrations*

$$\text{of } \frac{40}{20} = 2;$$

the *active* concentration would

$$\text{be } \frac{4-1}{2-1} = \frac{3}{1} = 3$$

the *active* concentration would

$$\text{be } \frac{40-1}{20-1} = \frac{39}{19} = 2.05$$

The example shows that the coefficient must always be greater for the low than for high concentrations. This must be true of all forms of stimulation, and would explain the general direction of Verworn's rule. It would also explain why the co-

efficient may be higher than 2. It would not explain the increase of the coefficient with lowering of temperature and with the time of exposure.

How important a part this factor may play in a given reaction could be computed if absolute values for the threshold stimulus were known; but no perfect example of this is known to the writer.

*Injury of the heart by exposure.* The excised heart, beating under unnatural conditions, is progressively deteriorating. This deterioration would be much greater for long than for short exposures. It would therefore be the greater, the lower the concentration and the lower the temperature. It could influence the apparent effects of the poison in opposite directions, according to whether the poison acts as a depressant or stimulant.

*If the poison acts as a depressant*, its apparent effects would be increased by the depression of exposure. In that case, the concentration coefficient will appear relatively smaller for long exposures and therefore for lower temperatures and lower concentrations.

On the other hand, *if the poison is stimulant*, its apparent effects will be decreased by the depression of exposure; and therefore the concentration coefficient will appear relatively larger for long exposures, and therefore for lower temperatures and lower concentrations.

This case applies to ouabain, since the observed reaction (systolic arrest) is a stimulant one, which is diminished by decrease of cardiac activity (Weizsaecker).

*Penetration.* The longer the time of response, the more thorough would be the penetration of the poison into the heart tissue, until equilibrium is reached. Therefore, up to this limit, the longer the time of exposure, the greater would be the actual concentration. Since the exposure is longer with C than with 2C, the quotient would become less than 2.

This diminution of the coefficient would of course hold only for exposures too short to permit complete penetration.

*To recapitulate the factors concerned in the explanation of the concentration coefficient:*

(a) The increase of the coefficient with lowering of the concentration is explained partly by the limit of response; partly by the "inactive dose"; and partly by the injury of exposure. The decrease with higher concentrations is also due partly to imperfect penetration.



(b) The increase of the coefficient with lowering of temperature, and (c) with the time of cardiac arrest are both explained by the limit of response and by the injury of exposure. In the case of rapidly arrested hearts, there is also the factor of imperfect penetration.

## V. *Conclusions.*

1. The toxicity of ouabain for intact frogs, determined by the one-hour systolic arrest dose, increases markedly with the temperature; the increase per degree of temperature being much greater at the lower than at the higher temperatures—curve 1. The differences are so marked that they cannot be neglected in the frog-assay.

II. Excised frog-hearts (Straub's method) show a similar effect of temperature on the activity of ouabain. The temperature-activity curves have approximately the same form, for all concentrations, as the temperature-activity curves for intact frogs.

III. 1. The temperature quotients for ouabain activity vary in the direction of van't Hoff's law as applied to biologic phenomena; but quantitatively they correspond more nearly to the square of the ordinary chemical temperature quotients, and to the square of the temperature quotient for the rate of the normal heart.

2. This is explainable by the fact that the activity of ouabain is increased by the temperature, not only directly, but also through the increase of the heart-rate.

3. The temperature quotients are parallel for all concentrations; but the quotient for a given range of temperature diminishes the higher the concentration.

IV. 1. The concentration coefficient  $\frac{\text{increase of activity}}{\text{increase of concentration}}$  ranges from 1.28 to 4.6, averaging 2.5.

2. The feebler the action of the ouabain, the more is the activity increased by doubling the concentration. This is true whether the feeble ouabain action is secured by low concentration or by low temperatures.

3. At least four factors would be concerned in this: The "limit of response"; the "inactive dose"; injury by exposure; and penetration of the ouabain.

REPORT OF A CASE OF RHEUMATIC ENDOCARDITIS COMPLICATED BY MULTIPLE EMBOLI AND THROMBOSIS, IN WHICH BLOOD FLOW DETERMINATIONS WERE CARRIED OUT, WITH A REPORT OF THE AUTOPSY FINDINGS

By R. W. SCOTT, M.D., and G. N. STEWART, M.D., from the City Hospital and the H. K. Cushing Laboratory of Experimental Medicine, Western Reserve University, Cleveland.

The following case was studied first at Lakeside Hospital and later at the City Hospital. It was deemed worthy of publication not on account of its rarity, but because it presented certain interesting clinical features, some of which were difficult to explain during life. These were readily interpreted in the light of the facts obtained from the post mortem examination, together with a series of blood flow determinations made in the hands and feet at intervals during the clinical course of the disease, which observations afforded a means of quantitatively estimating the impairment in the circulation.

*Clinical History.* The patient, Costa B., male, aged 47, first came under observation April 30, 1914, in the service of Doctor Hoover, to whom we are indebted for the opportunity of studying the case while at Lakeside Hospital.

On admission the man was suffering from an attack of acute rheumatic fever, involving the right knee and ankle. He gave a history at this time of having always been well prior to the onset of his present trouble. There was no demonstrable cardiac enlargement and no abnormal precordial activity palpable. A loud blowing systolic murmur was audible at the apex, otherwise the heart sounds were clear. He was given sodium salicylate to the point of toxicity, following which his temperature returned to normal, the inflammatory process in the joints abated, and he was discharged from the hospital May 9, 1914, feeling perfectly well.

Contrary to advice, he began to work the day following his discharge and worked steadily until July 31, 1914, when he was seized with a sudden attack of pain in the right leg, most severe in the region of the groin. He fell to the floor and was taken to the hospital in an ambulance.

Examination of the heart at this time showed a slight enlargement to the left, but no enlargement upward or to the right was demonstrable. There was a presystolic crescendo murmur running up to and ending in a loud and sharp first sound. A faint blowing systolic murmur followed the first sound. The second sound was clear. Palpation of the accessible arteries revealed an absence of the pulse in the left brachial and radial, with a normal pulse in the corresponding vessels of the opposite side. A good pulsation was present in the right femoral and popliteal, but absent in the dorsalis pedis and only faintly perceptible in the tibialis anticus on the right side. All the other palpable arteries showed a good pulsation. The following notes were made during the patient's stay in the hospital at this time:



August 4, 1914.—Patient is complaining of pain in the left elbow and right groin. Pulsation in the left radial artery is faintly perceptible. Pulsation in the brachial is normal. Pulsation has returned in the right dorsalis pedis.

September 1, 1914.—Patient is feeling well, although there is no pulsation in the left radial or right dorsalis pedis.

September 26, 1914.—Left arm is very painful. Still no radial pulse perceptible.

September 30, 1914.—Right radial pulse is diminished in volume, but brachial pulse normal.

October 3, 1914.—There is no pulsation in the left radial or brachial arteries. Patient is still complaining of pain in the right leg.

October 5, 1914.—The right radial pulse is absent.

October 8, 1914. Right radial pulse returned to normal volume.

October 10, 1914.—The left radial pulse is absent. Patient is complaining of pain in the left shoulder and down the left arm as far as the elbow.

November 20, 1914.—Patient discharged. The pulse in all the accessible arteries is normal except in the left radial artery, where it is diminished in volume, and the right dorsalis pedis, where it is absent.

The patient was not observed again until February 2, 1915, when he entered the City Hospital in the service of Doctor E. P. Carter\*, complaining of pain in the left arm and right leg, the pain being particularly severe with exercise. Since his discharge (November 20, 1914) he had remained fairly comfortable, but was unable to work, on account of the pain in the right leg when he attempted to walk. Examination showed a marked atrophy of both the left arm and the right leg, with no pulse in any of the accessible arteries of either extremity. The left hand and right foot were slightly cyanotic, and felt cold to touch. The pulse in the right radial and brachial was diminished in volume. No abnormality in the volume of the pulse was made out elsewhere.

The cardiac findings were the same as above noted on the previous admissions, except for the occurrence of occasional premature beats of auricular origin as shown by polygraphic tracings. Blood culture was negative on two different occasions. Temperature oscillated between 99 and 100.5° F. With the exception of a slowly progressive atrophy of the right leg, very little change was noted in the patient's general condition for three months, at which time (May 1) he developed extreme pain in both lower extremities, with a loss of the patellar and achilles reflexes on both sides. There was so much superficial tenderness that he would not tolerate the pressure of the bed clothes. This was interpreted as being due to an ischaemic condition of the peripheral nerve trunks incident to the extreme impairment in the mass movement of blood through the lower extremities. The right leg became much discolored. He died on May 4.

*Clinical Diagnosis.* Infectious endocarditis with stenosis and insufficiency of the mitral valve; multiple emboli and thrombosis; terminal edema of the lungs and gangrene of the right foot and leg.

\*Footnote—We desire to acknowledge the courtesy extended to us by Doctor Carter in our study of this case.

*Autopsy Findings Bearing on the Case.* The heart showed extreme dilatation and hypertrophy of the left auricle; the wall in some places measured 3 mm. in thickness. The mitral valve measured 10 cm., and displayed a marked grade of fibrotic thickening of both leaflets, while between the two there was situated a round mass of fresh, soft vegetation measuring 3 cm. in diameter. The mitral orifice measured  $1\frac{1}{2}$  cm. across. Minute dissection of the coronary arteries revealed nothing abnormal. In the left subclavian artery just at the origin of the vertebral artery there was an old and completely organized thrombus entirely obliterating the lumen of both the subclavian and vertebral arteries on that side. The right brachial artery for a distance of 8 cm. above the bend of the elbow was hard and thickened, with a lumen just large enough to admit the passage of a small probe. The right common iliac artery through its whole course and the first 8 cm. of the external iliac were completely filled with a partially organized thrombus which totally obstructed the circulation. The right femoral artery appeared as a hard fibrous cord and was about half the size of the left femoral. The left common iliac was not involved, but lodged in the left external iliac at its origin was a fibrinous mass 2 cm. long, completely occluding the lumen, but not adherent to the walls of the artery.

*Microscopic Examination.* A section from the site of obstruction in the subclavian showed the lumen completely filled with a mass of vascularized connective tissue, which in a few places was young and of the type of early organization tissue with lymphocytes and endothelial cells, but for the most part was of older, denser type, showing small spindle-shaped nuclei and well-developed fibrillar substance. Numerous endothelial cells contained hemosiderin granules. The intima was somewhat thickened; the internal lamina was necrotic. The media and adventitia were fibrotic.

A section of the right brachial showed its lumen almost obliterated with dense fibrous tissue, in the center of which was a distinct slit-like canal. No trace of a thrombus remained. The internal elastic lamina was almost complete, being interrupted at only one place, and only for a short distance. In the periphery of the thickened intima were several smaller blood channels, near which was a deposit of blood pigment. The thrombus from the right common iliac was almost completely hyalinized, showing dense, irregular bands of hyalin, with here and there in meshes masses of basophilic nuclear debris. Irregular bands of new connective tissue extended for a short distance into the thrombus from the wall of the artery. These bands contained delicate capillaries and showed an old central thrombus made up of finely granular acidophilic necrotic material, containing a few granules of hemosiderin. Both sides of the thrombus showed a moderately thick layer of organized tissue, which had gone on to the formation of fairly dense old connective tissue, containing large capillaries and a considerable number of lymphocytes and endothelial cells, many of the latter containing granules of hemosiderin. The intima was markedly thickened and hyalinized.



The media was fibrosed and hyalinized and showed atrophy and disappearance of its muscle. The adventitia also showed hyalinization of its connective tissue.

The first examination of the blood flows in the hands and feet was made on October 26, 1914. The flow was found to be 6.03 gm. for 100 c.c. of part per minute for the right hand, and 1.28 gm. for the left hand, with room temperature 22° C. No pulse could be detected at the left wrist. The ratio of the flow in the left hand to that in the right was 1:4.71. The flow in the left hand is perfectly compatible with complete obstruction of the left subclavian at this time. For, in a case of ligation by Doctor Hamann of the innominate and the common carotid for subclavian aneurysm in a man 25 years of age, the flow in the right hand, 11 days after the operation, was already 3.7 gm. per 100 c.c. of hand per minute (about one-quarter of the flow in the left hand); and in a woman 68 years old, on whom Doctor Hamann performed the same operation, the flow in the right hand a month after the operation was over 1.5 gm. (about two-sevenths of the flow in the left hand).

If, as the absence of pulsation in the radial and the small blood flow in the left hand indicate, the left subclavian was totally plugged at the time of the first blood flow examination, the block could hardly have been entirely due to such a complete organized thrombus as was found at autopsy. For, on November 20, 1914, a pulse was detected in the left radial, although it was diminished. At some time between the patient's discharge from Lakeside, on that date, and his admission at City Hospital, the obstruction in the left subclavian, it is to be assumed, became complete and permanent.

The flow in the feet of Costa B. on October 26 was 1.25 gm. for the right and 2.50 gm. for the left (ratio 1 : 2). This ratio was the highest observed in the series of examinations. Later on the ratio altered unfavorably to the right foot. Accordingly, there is every reason to suppose that at this date the obstruction on the arterial path of the right leg was less complete than it afterwards became.

The flow in the right hand is subnormal for the man's age. This would fit in with the existence at this date of a certain degree of obstruction on the arterial path of the right arm, such as was revealed at the autopsy. However, it must be remembered that the man's heart was handicapped, and if we compare the flow in the left foot, where there is no evidence of any ob-

struction, with that in the right hand, the ratio (1 : 2.4) is not abnormally small, as it ought to be if the path to the right hand was obstructed to any material extent at this time.

The second examination, made on February 24, 1915, showed a great improvement in the blood-flow in the left hand, notwithstanding the absence of pulsation in the accessible arteries of the limb. The flow in the left hand was 2.54 gm. and in the right 6.96 gm. per 100 c.c. of part minute (ratio 1 : 2.74), with room temperature 23.8° C. The improvement, both absolute and relative, in the flow in the left hand, is quite compatible with the existence at this time of complete block of the subclavian and with complete absence of pulsation in the part. The opening up of the collateral circulation after ligation of the innominate in the old lady mentioned raised the blood-flow in the right hand in the course of 16 weeks so much that the ratio between the flow in the right and left hands became 1 : 1.3 instead of 1 : 3.5, although it required a far longer time for pulsation to return.

At the third examination of Costa B., on February 26, 1915, the flow in both hands was increased, being 3.7 gm. per 100 c.c. per minute in the left and 9.98 gm. in the right, with room temperature 24° C. The ratio of the flows in the two hands was practically the same as at the second examination, indicating that the increased flow was due to increased output of the heart. The pulse rate was 102 at the third as compared with 81 at the second examination. The flow in the left foot was 6.5 gm., a marked increase, but that in the right foot was only 0.7 gm. per 100 c.c. per minute. The ratio of the flows in the two feet was 1 : 9.28, showing a great deterioration in the circulation of the right foot and no doubt of the whole leg since the time of the first examination.

All the other clinical signs (increased coldness of the foot, increased pain in the leg, etc.) supported the conclusion that the circulation had become worse. There was, however, no gangrene and blood-flows even smaller have often been measured in the absence of gangrene. The interesting fact that the sum of the flows in the two feet bears precisely the same ratio to the sum of the flows in the two hands, as was the case four months previously, suggested that "the blocking of the vascular path to one leg (doubtless the diminution in the flow extends to the whole of the right posterior extremity) is associated with a reciprocal dilatation of the path to the other leg, so that the normal parti-



tion of the blood between the legs and the rest of the body is scarcely disturbed. That is to say, the blood which normally finds its way through the two common iliacs seems eventually, when the main part of the path from one common iliac is blocked, still to find its way through the one which remains pervious, the normal limb making room . . . for an additional quantity of blood."\*

It will be seen that the suggestion as to the position of the block was confirmed by the autopsy findings.

The fourth examination was made on April 7. The details have not hitherto been published and are given in the table.

Blood-flow examination of Costa B., April 7, 1915. Pulse 132.

He says he feels very warm. Feet in bath at 2:34 P. M., in calorimeters at 2:51, and out of calorimeters at 3:07½ P. M.

Temp. of Calorim's				Temp. of Calorim's			
Time	Right	Left	Room	Time	Right	Left	Room
2:49	32.59	32.92		3:05	32.50	33.96	23.3
2:53	32.55	33.10	24.1	3:07	32.48	34.10	
2:55	32.525	33.25	23.5	3:10	32.42	34.09	
2:57	32.52	33.41	23.0	3:24½	32.03		
2:59	32.515	33.56	23.1	3:26½		33.72	
3:01	32.51	33.71	23.3				
3:03	32.505	33.82	23.4				

Cooling of calorimeters, right 0.39° C. in 14½ minutes, left 0.37° C. in 15½ minutes. Volume of right foot, 1194 c.c., of left foot, 1225 c.c. Water equivalent of foot calorimeters with contents, right 3858, left 3881.

Hands in bath at 3:30 P. M., in calorimeters at 3:38½, out of calorimeters at 3:47 P. M.

Temp. of Calorim's				Temp. of Calorim's			
Time	Right	Left	Room	Time	Right	Left	Room
3:37	32.48	32.49		3:44	32.82	32.50	24.5
3:39	32.49	32.48	24.3	3:45	32.87	32.51	24.6
3:40	32.53	32.46		3:46	32.94	32.52	24.7
3:41	32.62	32.48	24.5	3:47	33.05	32.53	
3:42	32.69	32.49	24.6	3:56	32.93	32.41	
3:43	32.76	32.50	24.6				

Cooling of hand calorimeters, right 0.12° C., left 0.12° C. in 9 minutes. Volume of right hand 489 c.c., of left 452 c.c. Water equivalent of hand calorimeters with contents, right 3486, left 3456. Rectal temperature, 38.75° C.

\*Footnote—Quotation from a paper by one of us on "A Study of inequalities in the blood-flow in the two hands (or feet) due to mechanical causes (embolism, compression of vessels, etc.) or to functional (vasomotor) causes, with a discussion of the criteria by which the conditions are discriminated," received for publication by *The Journal of Experimental Medicine*, March 17, 1915.

The patient felt very warm. In accordance with this, the blood-flow in the right hand was increased to 13.11 gm., much the largest flow seen in this case. The increase was no doubt due largely to cutaneous vasodilatation, which of course affected the flow in the left hand but little on account of the great resistance introduced by the mechanical block. The flow in the left hand (3.43 gm.) was even slightly less than at the last examination. This amount is perfectly sufficient to nourish a resting hand, and the hand did not trouble him. In the feet the flows were 1.51 gm. and 7.43 gm. for the right and left, respectively (ratio 1 : 4.92). A certain improvement in the collateral circulation of the right foot since last examination is indicated, and the clinical condition of the limb agreed with this. There was no sign of gangrene, the atrophy of the leg previously noted seemed marked, and the volume measurement showed little if any atrophy of the foot. Notwithstanding the fluctuation in the absolute amounts of the blood-flow in the hands and feet, the ratio of the combined foot flows to the combined hand flows remained practically the same (1 : 1.85) as at the previous examinations.

A natural explanation of the alternate deterioration and improvement in the circulation in the right foot revealed by the blood-flow measurements is afforded by the autopsy findings. It would seem probable that the block in the common iliac was complete before or about the time of the third examination (February 26). It is well known that after ligation of the common iliac a collateral circulation for the leg develops through various channels, e. g., the lumbar arteries. Opening up of this collateral circulation might have been responsible for the improvement noted at the last examination in April 7. Possibly some part of the circulation came from branches of the internal and external iliacs of the opposite side. If so, the lodgment of the fresh embolus in the left external iliac a few days before death would explain the impairment of the circulation noted in the left leg, as well as the gangrene of the right leg and foot. Of course, it is not known whether this freely movable embolus, although found at autopsy in the left external iliac, might not have lodged at or above the bifurcation, interfering there with the collateral circulation to the right leg (e. g., through the lower lumbar arteries) and the direct circulation to the left leg. It is assumed that the obstruction in the right common iliac was total before this time. If a small amount of blood was getting past this obstruction, the fresh



embolus, lodging at the bifurcation, would cut off this supply and lead to the acute symptoms which preceded death.

From the point of view of prognosis, the blood-flow measurements in such cases, although they cannot, of course, give warning in advance of fresh obstructions, are capable of answering the question whether, after an obstruction has occurred, the diminution in the circulation is nearing the danger point or whether there is a good margin of safety. Successive measurements will also give information as to whether the circulation is expanding satisfactorily or the reverse. In the case described, for example, the measurements indicated all along that the flow in the anterior extremity was sufficient for nutrition and was improving, whereas in the posterior extremity the first blood-flow observed was most satisfactory, and afterwards there was evident deterioration.

Sometimes the question whether an obstruction has occurred may be in doubt, and then a blood-flow measurement might help to clear the matter up. Thus, in a case of mitral stenosis\* in a boy 17 years of age, height 4 feet 10 $\frac{3}{4}$  inches, the question arose whether certain symptoms in the left leg and foot might not be due to embolism. The blood-flow examination showed, however, that the circulation in the left foot was rather better than in the right, and the ratio of the flow in the left foot (or of the average of the two feet) to the average flow in the hands was within the normal limits, indicating no such definite deficiency as must have been associated with embolism. The flow in the right hand (for the last 12 minutes in the calorimeter) was 10.56 gm. per 100 c.c. of part per minute, in the left hand 10.21 gm. (average for the two hands 10.38 gm.), with room temperature 26.8° C.

In the right foot the flow (for the last 10 minutes in the calorimeter) was 2.54 gm. per 100 c.c. per minute, and in the left foot 3.12 gm. (average for the two feet 2.83 gm.), with somewhat lower room and calorimeter temperature. The flows, both in hands and feet, are within the normal range, although, if anything, somewhat scanty for the age of the patient and the room temperature. Compensation was fairly established at the time of the examination.

---

\*Footnote—I am indebted to Doctor Blankenhorn of Lakeside Hospital for calling my attention to this case. G. N. S.

Feet in bath at 2:00 P. M., in calorimeters at 2:16, out of calorimeters at 2:49. 2550 c.c. water in each calorimeter. The day was rather warm.

Time	R	L	Room	Time	R	L	Room
2:15	31.47	31.45		2:35	31.52	31.56	26.1
2:17	31.42	31.455		2:37	31.53	31.60	
2:19	31.43	31.455	26.2	2:39	31.56	31.64	26.2
2:21	31.435	31.455	26.2	2:41	31.59	31.67	26.2
2:23	31.44	31.46	26.2	2:43	31.61	31.72	
2:25	31.45	31.47	26.1	2:45	31.64	31.755	26.3
2:27	31.46	31.48		2:47	31.68	31.79	26.2
2:29	31.475	31.50	26.1	2:49	31.71	31.85	
2:31	31.49	31.52		2:51	31.69	31.76	
2:33	31.50	31.54	26.1	3:06	31.49	31.55	

Cooling of foot calorimeters in 15 minutes, R. 0.20°, L. 0.21° C. Pulse 93. Volume of right foot, 792 c.c., of left, 816 c.c. Water equivalent of foot calorimeters with contents, R. 3336, L. 3354.

Hands in bath at 3:04½ P. M., in calorimeters at 3:13½, out of calorimeters at 3:26.

Time	R	L	Room	Time	R	L	Room
3:13	32.10	32.10		3:21	32.38	32.33	26.8
3:14	32.11	32.11	26.8	3:22	32.41	32.36	
3:15	32.14	32.14		3:23	32.43	32.39	
3:16	32.19	32.17	26.8	3:24	32.47	32.425	26.8
3:17	32.23	32.20		3:25	32.50	32.455	
3:18	32.29	32.23		3:26	32.52	32.48	
3:19	32.32	32.255	26.7	3:33	32.46	32.42	
3:20	32.35	32.29					

Cooling of hand calorimeters in 7 minutes, 0.06° C. Volume of right hand, 321 c.c., of left, 306 c.c. He is right-handed. Water equivalent of hand calorimeters with contents, R. 3352, L. 3340. Rectal temperature, 37.47° C.

**Detroit in 1916.**—As we noted in the minutes published in *The Journal of the American Medical Association* for July 3, the place for the 1916 session of the Association is Detroit, Michigan. Judging from the telegrams and letters accompanying the invitation received from that city, the Association may look for a most enjoyable time and a hearty welcome. It was announced semi-officially that no one would have to walk while in Detroit, and that everyone would be presented with a Ford car as a watch charm. However, Detroit is a central point, easily accessible to the whole country, and the attendance will be large.



**CASE REPORTS FROM THE MEDICAL  
DEPARTMENT OF THE DISPENSARY  
OF LAKESIDE HOSPITAL**

By V. C. ROWLAND, M. D., Cleveland

Case VII. *Pott's Disease with Spinal Cord Symptoms, Mal Perforans and Dissociation of the Sensation of the Syringomyelic Type.*

H. M. Dispensary No. 140276. Male, aged 25. Family history was negative to tuberculosis. The patient, now a typical hunchback of old Pott's Disease dates the onset of the trouble back to the 6th year of life. He was always well before that. As so frequently is the case, he attributes his back deformity to a fall. He was bed-ridden only for one week however after the fall and was never confined to bed during the following year although the deformity of the back was steadily increasing. He wore a brace during the year and was apparently free from pain and in fair health. The kyphosis has remained unchanged since the 8th year. The first suggestion of spinal cord disturbance was three years ago, that is at the age of 22. He was working in a field with several other men in early winter. He was not annoyed by the cold while his companions were complaining and running about to keep warm. The next morning he was surprised to find that he had frozen his toes. Unhealthy ulcers formed and healed slowly over a period of six weeks. Shortly they broke open again on the first and second toes of each foot. He finally had the two second toes amputated. The circular ulcer, typical of mal perforans has remained since on the bottom of each great toe. Curiously there has been no pain at any time. He has noticed considerable loss of muscular control in the legs and also for the more delicate motions of the hands. On physical examination the general condition seems quite good, there is no evidence of any active tuberculosis anywhere. The kyphosis involves most of the thoracic spine and there is considerable lateral curvature as well. The X-ray shows that the old lesion was not sharply limited to one level but extended over several midthoracic vertebrae which are now firmly ankylosed.

The sensory disturbances begin at the level of the 6th segment with a zone of hyperesthesia of variable width. All of the sensory changes are less marked posteriorly especially in the

lower part of the buttocks. At the level of the anterior superior spines of the ilium, anesthesia to heat and cold is very marked, to pain somewhat less marked and to touch only slight. All increase downwards until there is very little sensation of any kind in the feet, when tested with ordinary stimuli. What is perceived is vaguely interpreted as touch or pressure. The sphincters are intact. The knee jerks are absent and there is a marked Romberg's sign. There is slight impairment with a similar dissociation of the sensation in the hands and distal forearm. The rest of the arms, the upper chest and head were unaffected. This suggests some upward degeneration in the cord although there may be pressure or traction on the cord up to the level of the first thoracic segment which sends branches to the brachial plexus.

This particular type of spinal cord symptoms in Pott's Disease has apparently received little mention in the literature. Edsall reported a similar case and stated that practically all previous reports of spinal cord changes in Pott's Disease dealt with disturbances of the tactile sense only. His case was similar to the one above in the distribution of sensory changes and in the form of dissociation. The patient was distinctly improved by two months' rest in bed with head extension—only temporarily however. In two weeks everything was the same as before. Later paraplegia developed. Edsall considered in the anatomical diagnosis of this anomalous case, a central conglomerate tubercle causing the original disturbance of temperature and pain sense and then extending to the periphery of the cord when the paraplegia appeared. However any form of pressure myelitis may show dissociation of the sensation as for instance in spinal cord tumor. This has practical significance in the differential diagnosis of syringomyelia and spinal cord tumor especially when the root pains of the latter are lacking. Cases suitable for the surgical removal of a spinal cord or dural tumor have gone to autopsy with the mistaken diagnosis of syringomyelia, based largely on dissociation of the sensation with thermo-anesthesia.

---

Case VIII. *Pott's Disease with Spinal Cord Symptoms, Dissociation of Sensation of the Syringomelic Type and Root Pains Simulating an Acute Abdominal Condition.*

L. L. Dispensary No. 139369. Male, age 28. This case is of interest because of its similarity to Case VII, but with



minor variations that might be expected with slightly different pressure on the spinal cord. It is also interesting to note the history of family infection. The patient was well up to the age of 14. At this time a sister had pulmonary tuberculosis and died one year later. During his 14th year, the patient, living with the tuberculous sister, gradually developed his spinal deformity, which increased slowly but steadily till his 18th year. He never had to go to bed with pain or other symptoms, although his general health was impaired. For the last 10 years there has been no change and until three weeks ago he was in good health. At that time he began rather suddenly to have bad headache, stomach distress and some fever. Following this he was unable to move his bowels and two days later had intense shooting pains, in the region of the appendix. For four days cathartics were unavailing and intestinal obstruction was suspected. A hot water bottle was applied to relieve the pain with the result that a bad burn was produced, which three weeks later (his first appearance at the dispensary) left an ulcerating surface three inches in diameter, such as one sees in the burns in syringomelia. At this time he had a temperature of 101.5. He has also been having night sweats and lost 13 pounds in weight. For the past week the abdominal pain has been more of a continuous ache. Neurological examination showed anesthesia to heat and pain in the distribution of the 7 to 12 dorsal segments on the right side and extending down the outer side of the thigh to the knee. It was somewhat less marked on the left side. The area supplied from the sacral segments—the genitals and inner side of the buttocks were not affected. As in the other case thermoanesthesia was the most marked and the tactile sense the least disturbed. The sensation in the hands and feet however is normal. The reflexes are good and there is no Romberg's sign. In this case then although the extent of cord changes is much less, the same dissociation of sensation occurred.

This patient was seen again at a recent visit which was about three weeks after the above acute symptoms. He had a normal temperature and was feeling exceptionally well. The sweats and loss of weight suggested a recrudescence of his tuberculosis, but all the acute symptoms promptly subsided, his appetite returned and he has regained most of his lost weight. The burn has entirely healed leaving a scar such as one sees in

syringomyelia. It seems very probable that the acute upset was due to spinal cord pressure causing root pains and a transient dynamic ileus.

Case IX. *Syringomelia*.

R. Dispensary No. 141112. Female, age 40. By a curious coincidence, this case appeared shortly after the above two. It afforded an opportunity to compare the secondary cord changes of the latter with the primary degeneration of the spinal cord. The disease had the usual insidious onset and the steadily progressive course. The patient had an absolutely negative past history even as to the infections of childhood. She was married at 32 years of age but her husband deserted her soon after marriage and there were no pregnancies. There was no history of alcoholism, drug addiction, etc. The first symptom appeared eight years ago in the form of indefinite pain in the right arm, inconstant and influenced by weather changes, etc. Weakness, stiffness and coldness of the extremities gradually became more marked. The patient's weight in health about 10 years ago was 185 pounds and there has been a very gradual reduction during the entire illness, so that her present weight is only 135 pounds. Of late there has been some swelling of the left ankle. The only notice that the patient has taken of sensory disturbances is the "numbness" of her hands and feet and on being questioned the blistering of her fingers several times with hot objects without feeling any heat. Her main complaint is "rheumatism" as she terms the stiffness and the disability of motor and sensory changes.

On physical examination her general nutrition is fairly good. The only positive findings aside from the neurological were some dullness and accentuation of breath sounds at the left apex. There are no signs or symptoms of a very active tuberculosis. There is marked scoliosis involving mainly the lower dorsal spine. Marked atrophy of fore arms and hands is apparent at a glance. The hand is the typical main-en-griffe especially on the left side. There is also some atrophy of the deltoid muscles and of the rhomboids and serratus magnus on the left side with "winging" of the scapula. Reflexes in the arm are lost. The sensory changes are characteristic. Thermo-anesthesia and hypalgesia are quite marked. Tactile sensation is better but distinctly numbed in the fingers. From both motor and sensory impairment, the control of the fingers in finer movements, such as in



sewing, is lost. In the trunk similar sensory changes are found but a predominantly unilateral lesion is indicated by the scoliosis and by anidrosis on the left side. In the lower extremities the motor disturbance is in general of the upper neurone type. The knee jerks are exaggerated with ankle clonus and Babinski's sign on the left. The achilles jerks however are relatively impaired especially the right. There is also some atrophy of the anterior tibial group of muscles, so that there is probably a mixed upper and lower neurone lesion. The left foot is cool and cyanotic and the dorsalis pedis artery is not palpable. The same type of sensory disturbances occurs in the lower extremities as in the upper. A general view of the nervous changes shows the characteristic combination of atrophic paralysis in the distribution of the upper segments of the cord and a spastic paralysis in the lower with sensory impairment especially to heat and pain. Spinal curvature also aids in the diagnosis of syringomelia. In this case the motor disturbances are relatively more prominent in comparison to the sensory than in the most cases of syringomelia. It is readily classed in the amyotrophic type of syringomyelia, using Osler's classification of four groups, the other three being—the spastic type, the so-called Morvans disease and the spinal cord tumor type in which the dissociation of sensation is lacking.

---

Case X. *Multiple Arthritis with the Clinical Picture of Arthritis Deformans but definitely Gonorrhoeal in Origin.*

M. F. Dispensary No. 141196. Male, age 30. Always well until six years ago when he had the first attack of specific urethritis. This subsided in the usual time with no complications. One year ago he had another attack of urethritis with involvement of several joints—interphalangeal joints of the hand—the left knee and also the gonorrhoeal heel in the form of acute tenderness on the bottom of the os calcis. Swelling has continued in the joints ever since the onset one year ago. Six weeks ago he had another acute attack of urethritis, when another set of joints inflamed, among them the right temporo-mandibular joint, so that there is acute tenderness over the condyle of the jaw and limitation of motion. The incisor teeth can be separated about three-fourths of an inch. The finger joints at present would be indistinguishable from those of arthritis deformans. The teeth in this patient fortunately for the diagnosis were exceptionally

good—no caries or pyorrhoea at all. No pus could be expressed from the crypts of the tonsils and there was no history of tonsillitis. General physical examination was negative. Rectal examination showed a soft, tender prostate and acute tenderness in the region of the seminal vesicles, which with the history of the onset of the arthritis left little doubt as to the etiology. The instructive feature was the clinical picture of chronic arthritis deformans definitely gonorrhoeal in origin and associated with a chronic prostatitis and vesiculitis. It supports the theory of arthritis deformans as a chronic septic arthritis of non specific bacterial origin. It is quite possible however that the streptococci that have been reported so often in the infections of the joints of arthritis deformans occur as secondary invaders in these obstinate foci of gonorrhoeal infection. Drainage of the seminal vesicles as advocated by Squires by perineal incision would seem justifiable early in these cases, since other local treatment is so unsuccessful and because of the danger of permanent damage to the joints if not of gonorrhoeal endocarditis or septicemia.

---

Case XI. *Tabes Dorsalis with Unusually Extensive Involvement of the Cranial Nerves as well as of the Spinal Cord.*

R. D. Dispensary No. 139707. Male, age 41, American. Family and past history were negative until the primary syphilis, 13 years ago. This was definite and followed by typical secondaries. The patient who was quite intelligent claims to have faithfully carried out treatment for three years according to his physician's advice. The treatment was largely protiodide pills by mouth. No signs of syphilis returned until the first lightning pains of his tabes six years later. These pains however grew less severe and for five years more there was no marked disturbance of his general health. In December of 1913, 11 years after the initial lesion, he began to show disturbances in the innervation of the larynx—difficulty in phonation and fits of cough. The latter seemed to the patient to be due to mucus running down into his "windpipe." In August of 1914, the voice was lost almost entirely. This gradually improved over a period of weeks but a low pitched, hoarse voice with vocal cord paralysis has continued since. There were several paroxysms of painful choking and strangling, which were probably true laryngeal crises since they came at times when the patient was not apt to get food or other foreign bodies into the larynx. In December of



1914, there appeared rather unusual disturbances of the innervation of the intestines. There has been since then and especially of late almost constant desire to defecate yet without incontinence and without loose diarrhoeal movements. There would be 15 to 20 small semiformal stools a day, the annoyance and exhaustion of which were the patient's chief complaint on admission to the Dispensary. There was also a history of diplopia several months ago lasting one month.

On physical examination the patient was extremely emaciated. There were signs of marked but quiescent pulmonary tuberculosis. There were no rales at this time at all. There was no fever and his cough and hoarseness were evidently due to the vocal cord paralysis. The pupils were small and absolutely fixed. Distinct impairment of hearing in the left ear was readily determined. In the throat the left side of the soft palate was paralyzed so that when the patient was asked to say "ah" the uvula was drawn over to the right tonsillar pillar. At a glance one could recognize marked wasting and asymmetry in the neck and shoulder regions, due to atrophy of the sterno-cleido mastoid and trapezius muscles. It was obvious that the nucleus of origin of the spinal accessory nerve was especially involved in the destructive process. The last cranial nerve, the hypoglossal, escaped fairly well since there was very little atrophy of the tongue. The knee jerks were entirely gone and sensation in the lower extremities was impaired moderately—more noticeable on the outer side of leg. The Romberg sign was present.

The patient grew steadily weaker. About one month after his appearance he developed an external strabismus in the left eye. Treatment had no effect. The exhaustion became extreme and the patient lapsed into unconsciousness and died about two months after his first appearance. Unfortunately autopsy was not permitted.

In this case the tabetic process apparently extended through the floor of the fourth ventricle and up to the nucleus of origin of the third nerve. There were marked disturbances in the distribution of the second, third, fifth, eighth, ninth, tenth and eleventh cranial nerves. There was however no suggestion of paresis. The patient was unusually intelligent and sensible. His memory was good and his earning capacity good as a salesman until overcome by physical weakness. Lightning pains in the thoracic region, disturbed intestinal functions and impaired

innervation in the lower extremities showed implication of the spinal cord to the level of the lumbar segments. The sacral segments however were less involved since there was no marked disturbance of the sphincters.

---

Case XII. *Astasia Abasia, Apparently Hysterical, Proving to be Associated with Organic Nervous Disease.*

J. P. Dispensary No. 141412. Male, age 44. Italian laborer. Family history was negative. The patient was married and had several healthy children. There was no history of previous infection venereal or otherwise. The only factor of significance in the past history was the quite free and steady use of alcoholics. In fact the patient had made his first appearance at the Dispensary three weeks before the onset of his present symptoms for gastric disturbances, at least in part due to alcohol. There were some headache and dizziness at that time as would be expected but these symptoms disappeared as the gastritis subsided. After three weeks of abstinence from drink the general condition of the patient was much improved. Then while at home he suddenly seemed unable to stand or walk alone. It was shortly after Italy entered the European war. There had been considerable war talk among the Italians and the patient had a brother in Italy subject to call.

On examination the patient could walk hesitatingly when supported on either side. He would take short steps and advance one foot cautiously as if approaching a precipice. He could not stand alone although the support of one finger would give him confidence to do so. Instead of a Romberg sign he could stand somewhat better with his eyes closed even in a strained position such as leaning at an angle to one side—a tower of Pisa! He had the facies of fear and solicitude—was very susceptible to suggestion and also semi-cataleptic. The arms placed in any posture were held in statue fashion for some time, gradually lowering as fatigue came on. When sitting or lying down, there seemed to be normal muscular control. Neurological examination was entirely negative. The reflexes were not unduly active and sensation undisturbed. According to the family the patient's mind is normal except that his memory is poor and that he seldom speaks at home unless questioned.

He remained in this condition about three weeks when he



finally went to a hospital. About a week later he developed incontinence of urine and feces, in addition to the above symptoms which remained the same except that a suggestion of ankleclonus appeared at times on the left side. Lumbar puncture showed 45 cells to the cmm. on three separate occasions and 60 cells on a fourth test. Wassermann reaction was negative however on both blood and cerebrospinal fluid. The Lange gold test was positive. Antisyphilitic treatment has been carried out now for a short time with little if any improvement. Of course imperfect recovery does not disprove the syphilitic origin of the condition. It is still the most probable diagnosis although not yet established. The most important fact is that there is organic disease present with this symptom complex of astasia abasia which had been regarded as purely functional. Interesting in this connection is the recent report of functional dysbasia as a war psychosis in the London letter on the war in the *Journal of the American Medical Association*.

---

**Urinary Calculi.**—J. Rosenbloom, Pittsburgh (*Journal A. M. A.*, July 10, 1915), reports the results of the chemical analysis of a new series of twenty-six renal calculi, in addition to the twenty-five previously reported by Doctor Kahn and himself. As in the former series the results show that the large majority of renal stones are chiefly composed of calcium salts and not of uric acid or urates, only two of the twenty-six having the latter composition. Rosenbloom calls attention again to the fact that the therapeutic measures for the treatment of insoluble calcium salt calculi are altogether different from those to be employed for uric acid calculi; hence the need of a chemical examination of all renal stones before a rational treatment can be undertaken.

## LUETIN REACTION\*

By HAROLD FEIL, M. D., Demonstrator of Medicine, Western Reserve University, Cleveland, Ohio

The use of the syphilitic virus to provoke a skin reaction as a diagnostic aid in the treatment of syphilis was first suggested by several investigators, among them Neisser and Bruck. Their work appeared before the successful growth of the organism by Noguchi. Immediately after the cultivation of the *Treponema pallidum* by Noguchi, the latter began an investigation of the value of the pure virus in the diagnosis of the disease. The preparation which was described under the name "Luetin" was composed of an emulsion of the organisms grown in ascitic fluid and ascitic fluid agar, containing placenta tissue, the emulsion sterilized by heating to 60 C. for 30 minutes and by the addition of 0.5 per cent Trikresol.

*Technique of the test.* The emulsion as furnished by Noguchi is diluted one-half with sterile salt solution, and 0.07 cc. of this injected intradermically with an all glass tuberculin syringe with a fine needle. A successful injection is recognized by the formation of a wheal about 4 mm. in diameter, sharply defined. This wheal subsides within a few hours, and at the end of twenty-four hours in non-luetics only the puncture is seen, surrounded by the very faintest pink zone at times, not exceeding in size the original wheal. Rarely the wheal persists for twenty-four hours, but quickly subsides without any marked reaction. In a positive test, we find a definite reaction beginning in twenty-four to forty-eight hours. This may be one of the following types described by Noguchi.

(1) Papular form. This consists of the formation of an indurated papule more than 5 mm. in diameter, markedly hyperemic, surrounded by a zone of inflammation over which dilated vessels may be seen. The redness and induration increase for four or five days, when the lesion disappears. At times the papule becomes "dark bluish red." Within two weeks the site of the test has returned to normal, or occasionally a little yellowish pigment remains. At times pigmentation follows. The severity of the reaction is dependent on the stage of the disease, being more marked in visceral and tertiary lues. Cases which have

---

\*From the Medical Department of the Dispensary of Western Reserve University and Lakeside Hospital.



never received treatment, and which may either, not react or which may react slightly, may react strongly after a course of anti-syphilitic treatment.

(2) Pustular form. In this finding the lesion appears first as a papule, but after four or five days "the inflammatory processes still increase in intensity. The surface of the indurated, round papule becomes mildly oedematous, and multiple miliary vesicles occasionally form. At the same time, a beginning central softening of the papule can be seen. Within the next twenty-four hours the papule changes into a vesicle filled at first with a semi-opaque serum which later becomes definitely purulent. Soon after this the pustule ruptures spontaneously or after slight friction or pressure. The margin of the broken pustule remains indurated, while the defect caused by the escape of the pustular content becomes quickly covered by a crust that falls within a few days."

(3) Torpid form. This differs from the other types chiefly in the incubation period of the lesion. The latter may be from a few days up to ten days, or the reaction may not occur until active anti-luetic treatment is given.

(4) Hemorrhagic form. A further type has been described where the lesion contains a hemorrhagic fluid. This was seen in one of our cases.

In negative cases certain reactions are seen which need explanation. Occasionally a small papule, slightly red, forms, but without any surrounding zone of inflammation. This reaction quickly subsides. In no cases where syphilis could be excluded have we seen a positive reaction in our series of 113 observations.

*Theories of action.* The much-discussed question is regarding the specificity of the reaction.

(1) Neisser believes that the local reaction is due to an altered susceptibility of the skin ofluetics to trauma, which he calls "umstimmung."

(2) Finger explains the phenomenon as being due to "superinfection." He supposes that the traumatism of the injection causes a lessening of resistance and that the spirochaetes migrate to this place, causing the lesion. In criticism of this theory—no organisms have been found in the lesions.

(3) Joltrain considers the reaction a phenomenon of local anaphylaxis.

(4) Noguchi believes that it is caused by an allergic state.

*Pathology.* Dauer in studying these lesions microscopically described large giant cells as being present in the inflammatory area. No organisms were seen.

*Specificity.* Perhaps the most mooted point is whether or not the skin reaction is specific for syphilis. A number of investigators have never obtained positive reactions in known negatives, while numbers of observers have obtained positive reactions in normal individuals. There seems to be no unanimity in opinion. These findings can only be ascribed to the variations in technique and in the difference in preparations of luetin. The literature on the subject is entirely upon work performed with luetin prepared by Noguchi, and the cases reported in this paper were inoculated with the same luetin. In our series of 113 injections no positive reactions were obtained in individuals where lues could be excluded. In 88 cases which were controlled by Wassermann tests performed by Doctors Cummer, Dexter, and Cole there was a like report in 54 cases. In 11 cases the Wassermann was positive while the luetin was negative. In 11 cases the Wassermann was negative while the luetin was positive. In 14 cases of aortic disease, the Wassermann was positive in 4 cases while the luetin was positive in 8 cases. The tabulation of findings in this group is illustrative of the value of luetin test.

#### Aortic Disease

Wassermann		Luetin	
Positive	Negative	Positive	Negative
4	10	8	6
28.5%		57.1%	

In three cases of this series the Wassermann and luetin were both positive. In one case the Wassermann was positive while the luetin was negative—a case which had never been under treatment. In five cases there was a positive luetin and a negative Wassermann. In five cases Wassermann and luetin were negative.

Reports from different investigators vary; the reasons may be summed up under the following heads:

(1) Variation in technique, depth of injection, amount used, dilution, and trauma.

(2) Variation in the virus used. Jeanselme and Joltrain in using different samples of luetin furnished by Noguchi obtained varying results in using them on the same patients.

(3) Possibility that the known negatives may really be



sensitive to the virus, through heredity, as demonstrated by Joltrain in a case of a grandchild of a luetic, who was seemingly normal.

Doctor Harold N. Cole and Doctor Richard Dexter using Noguchi's luetin on normal students at Lakeside and Cleveland City Hospitals obtained several positive reactions.

Substances other than luetin have been used with results similar to those obtained by the specific virus. Jeanselme obtained positive reactions by the use of an extract of trypanosomes, all positive to luetin. The reactions were not as severe as those caused by luetin, but in a few cases were difficult to distinguish from the specific tests. Joltrain obtained similar results with an extract from the spirochaete of Framboesia. If the reactions to toxines other than luetin stopped with the use of extracts from this group of organisms, we might call the reaction a group one, but unfortunately similar reactions have been obtained by Boas and Burnier by the employment of different vaccines—staphylococcus, colon, and tubercle. Boas used an extract prepared from a chancre.

In reviewing the literature a large number of case reports have been read. The percentage of positive cases in the different stages of syphilis has been tabulated from the literature and a comparison made with the small number of cases which the author wishes to report.

	Literature		No. of Cases	Lakeside	
	L % Pos.	W % Pos.		L % Pos.	W % Pos.
Primary syphilis .....	33	72	---	---	---
Secondary syphilis .....	47	80	---	---	---
Tertiary syphilis .....	79	80	---	---	---
Congenital syphilis .....	73	69	3	0	.33
Syphilis of the nervous system..	---	---	---	---	---
Cerebro-spinal lues .....	60	---	6	80	80
Tabes .....	60	---	6	66	33
Paresis .....	60	---	1	0	100
Visceral syphilis .....	---	---	---	---	---
Aortitis .....	90	---	14	43	29
Latent lues .....	---	---	10	20	30
Diseases other than syphilis.....	---	---	59	18.6	10.1
Normal cases .....	14 Pos. in Literature		14	0	---

### Summary

(1) Investigators have found positive reactions in non-luetic cases.

(2) Substances other than luetin have given positive reactions similar to those caused by luetin.

(3) The weight of evidence has it that a positive luetin is not usually found in non-syphilitic cases, but that a positive skin test may be obtained in syphilitics by the use of other than the luetic virus. Luetin gives the most uniform results. This finding may be analagous to the question of specificity of the Wassermann test, where other than syphilitic antigen is frequently employed.

(4) In reviewing a large number of cases, we find that a positive result is obtained in a larger number of cases of visceral syphilis than is the Wassermann and it is in this class that the skin test of Noguchi is of definite value as a guide in diagnosis. While it is found in a fair percentage in other stages of the disease, its constancy is not that of the Wassermann and is, therefore, of less value in diagnosis and treatment. In our series of 14 cases of aortitis the Wassermann was positive in 28 per cent, while the luetin was positive in 57.1 per cent of these cases.

#### Bibliography

- Noguchi: *Journal of Experimental Medicine*, Vol. XIV, No. 6, 1911.  
 Noguchi: *Serum Diagnosis of Syphilis*, Lippincott & Co., 1912.  
 Fox, H.: *Journal of Cutaneous Dis.*, Aug., 1912.  
 Wolfsohn, J. M.: *Johns Hopkins Hospital Bull.*, Aug., 1912.  
 Brown, Alan: *American Journal Diseases of Children*, 1913, p. 171.  
*American Journal American Science*, 1913, p. 645.  
 Studies in Leprosy, U. S. P. H. Bulletin 61, July, 1913, p. 11.  
 Rytina: *Med. Rec.*, March, 1913, p. 384.  
 Kaliski: *New York Med. Journal*, July 5, 1913.  
 Schnitter: *Journal Cutaneous Dis.*, Aug., 1913, p. 549.  
 Loizeaux: *Calif. State Journal of Med.*, Sept., 1913, p. 360.  
 Wolfsohn: *Calif. State Journal of Med.*, Sept., 1913, p. 365.  
 Noguchi: *La Presse Medicale*, Sept., 1913, p. 757.  
 Simpson: *Journal A. M. A.*, April 26, 1913, p. 1329.  
 McNeil: *Journal A. M. A.*, Feb. 14, 1914, p. 529.  
 Kilgore: *Journal A. M. A.*, April 18, 1914, p. 1236.  
 Vedder & Borden: *Journal A. M. A.*, Nov. 14, 1914, p. 1750.  
 Keppler: *Deut. Zeit. Für Chirurgie*, 130 1914, p. 440.  
 Faguioli & Fisichella: *Berl. Klin. Woch.*, March 9, 1914, p. 449.  
*Münch Medizin Klinik*, May 10, 1914, p. 811.  
 Nann: Muscel, Alexandresan-Dersca and L. Friedman: *Münch Med. Woch.*, June 9, 1914.  
 Browning: *Ojsth Review*, 1914, No. 387, p. 33.  
 Fleischmann, R.: *Hamburgische Med. Uebersehefte*, 1914, Bd. 1, Vol. 8, p. 356.  
 Muscel and Alexanderes-Dersca: *Münch. Med. Woch.*, June, 1914, p. 1271.  
 Blechmann, Delorb & Tulasne: *Ann. de Med. et Chirurgie*, June and July, 1914.  
 Pusey & Stillians: *Journal Cutaneous Dis.*, Aug., 1914, p. 560.  
 Clausz: *Münch. Med. Woch.*, Sept., 1914, p. 1933.  
 Alderson: *Calif. State Journal of Medicine*, May, 1915, p. 173, Vol. XIII, No. 5.  
 Noguchi: *N. Y. Med. Journal*, Aug. 22, 1914, p. 349.



## EARLY INCISION OF BREAST ABSCESES DURING LACTATION

By J. L. BUBIS, M. D., Cleveland

One of the most common complications of the puerperium is inflammation of the breasts. Upon the promptness and success in treating this condition, the function of the breasts and the health of both mother and child depend.

*Etiology*—A breast abscess may be caused (a) by traumatism or exposure to cold, both of which lessen the resistance to infection, (b) by infection caused by unclean hands, dirty cloths or cotton applied to the nipples, contaminated water or unclean condition of the infant's mouth, (c) by retention of the milk in the breast glands and ducts, so-called "caked breasts," which lowers the resisting power of the cells by compression, and also makes a good nidus for infection.

According to location, these abscesses are classified as superficial, which generally occur near the nipple, intramammary or intralobar, i. e., within the gland substance, and post mammary, i. e., in the connective tissue between the breast and the chest wall. The last variety is very rare. It may not follow a mammitis, but may occur from some infection through the lymph system.

*Symptoms*—These depend upon the location of the abscess. In the superficial, the patient complains of pain and tenderness especially when nursing the infant. There is a slight increase in temperature and the tumor varies in size to that of a plum. The skin becomes thin and red from the inflammation and within a few days fluctuation is felt.

An intramammary abscess is a much more serious condition. It may be single or multiple. The pain is deep-seated and there is a marked rise in temperature associated generally with chills. At first the tumor is quite firm and signs of suppuration and fluctuation may not be elicited until the breast is damaged beyond repair. The condition of the skin depends upon the depth of the abscess, a dusky red color is almost pathognomic of pus beneath.

It may take weeks before a diagnosis of retromammary abscess can be made. The patient may complain of a slight neuralgic pain or a feeling of pressure radiating from the breast or chest to the back or into the arm; or the abscess may start with

alarming symptoms of sepsis, with rigors and chills, high temperature and rapid pulse. There may be throbbing pain increased by movement of the arm, and the breast is pushed forward by the pillow of pus behind it. Unless quickly drained, the pus may burrow into the thorax, although it generally "points" at the lower border of the breast or in the axilla.

*Treatment* is early, prompt and free incision, light packing which is generally removed on successive days, hot applications, support to the breast, and last but not least, Bier's hyperemia with frequent use of the pump. It will not be necessary to stop lactation in the breast, pre-operative poulticing is dispensed with, the suffering of the mother will be lessened, the function of the breast will be preserved, and the cavity will heal quicker by this method.

It is not necessary to wait for the abscess to "point." If within a reasonable length of time and after having tried the various abortive methods, the tumor does not decrease in size, but becomes more painful and the temperature increases, the above method will prove ideal. If there is no pus, no harm will be done by releasing the tension within the tumor through an early incision. Pressure-necrosis and pus will thus be avoided. This operation may be done under any anesthetic, local or general, and the prompt relief from pain is remarkable.

1725 E. 82nd Street.

---

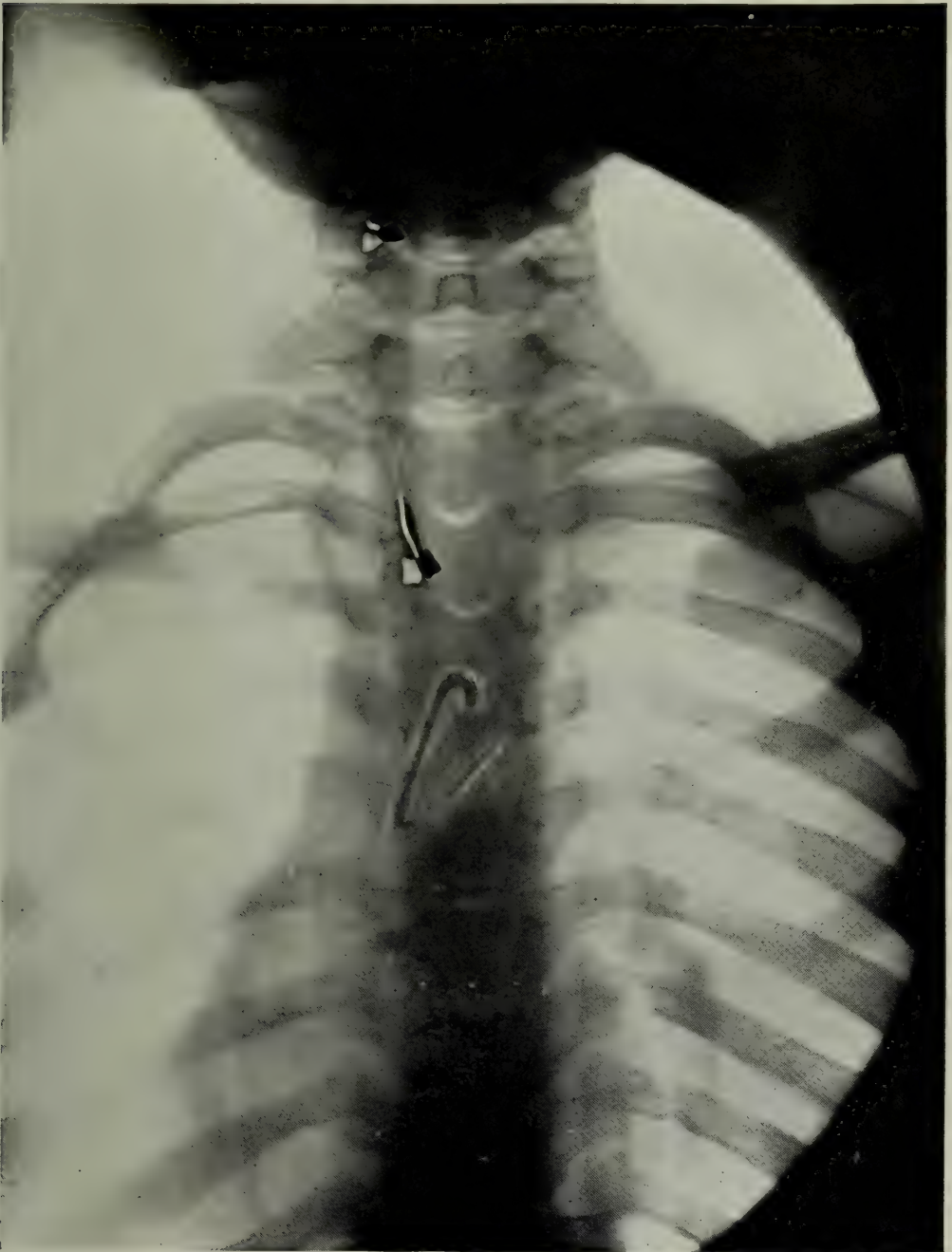
**Scarlet Fever.**—B. E. Knause, New York (*Journal A. M. A.*, July 24, 1915), gives a critical study of the figures of Doctor Young, the late Chicago Health Commissioner, especially in regard to quarantine. He compares Doctor Young's figures with those of the Borough of Brooklyn, and argues that the liberal quarantine of the Health Department of New York, according to the weight of evidence is more justifiable than the system of classified quarantine used in Chicago. It certainly interferes less with the school attendance of children and causes less hardship in families. A more extensive comparison of figures, however, will be required to satisfactorily settle the questions involved. The paper needs close study in order to fully appreciate the arguments, pro and con, that are advanced by the author.



**REMOVAL OF AN OPEN SAFETY PIN, POINT UP,  
FROM THE LEFT BRONCHUS OF A SEVEN  
YEAR OLD CHILD**

By SECORD H. LARGE, M. D., Cleveland, Ohio

A. B. Male, aged 7. The patient inhaled an open safety-pin. He was seized with a paroxysm of coughing, and became quite cyanotic. He was later taken to Charity Hospital and an X-ray photograph taken, showing an open safety-pin, point up, in



the trachea just below the larynx. Absence from the city prevented my seeing the patient until the following day.

Under suspensory laryngoscopy, using Lynch's Bivalve laryngeal speculum, the safety-pin could not be seen in its position on the plate, but after passing the bronchoscope I was able to locate the pin at the bifurcation of the trachea, with its point sticking up. On account of the poor condition of the child and as safety-pin closers were too large for lumen of tube, it was decided to wait until the following day, and endeavor to remove the pin through a tracheal wound.

Under ether anesthesia a tracheotomy was performed, and using the Kilian tube the point was freed with a great deal of difficulty, after which the pin was readily removed. The wound in the trachea was not sutured, but the skin and subcutaneous tissues were brought together, leaving a drain in the lower end of the wound.

The patient was able to leave the hospital on the fourth day.

The safety-pins manufactured at the present time are of very stiff wire and constitute, without doubt, the hardest foreign bodies we have to remove, and with additional difficulties if the pin be opened and its point directed upwards.

536 *Rose Building.*

---

**Foreign Bodies in the Lungs.**—G. L. Richards, Fall River, Mass. (*Journal A. M. A.*, July 17, 1915), reports the case of a young man who has had, since 1910, occasional chills followed by fever, though apparently otherwise healthy except for occasional attacks of pain. He had a very slight cough and some trouble in the right lung was suspected. Nothing abnormal had been discovered by a fluoroscopic examination. The blood count showed a steady leukocytosis above normal but no definite physical signs of lung disease. A thorough roentgenoscopy showed a tack in the right bronchus which the patient could not remember ever having inspired, and it is probable that it had been there for many years. It was largely eroded and covered with oxidation products. It was removed by bronchoscopy and the patient was relieved of further trouble.



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902.

Capital Stock, \$6,000

---

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH F. STONE  
2318 PROSPECT AVENUE

## ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.  
ROGER G. PERKINS, M. D.

JOHN PHILLIPS, M. B.  
T. WINGATE TODD, F. R. C. S.

## COLLABORATORS

C. E. FORD, M. D.  
H. E. HANDERSON, M. D.  
S. W. KELLY, M. D.  
J. J. R. MACLEOD, M. D.

DAVID MARINE, M. D.  
V. C. ROWLAND, M. D.  
H. L. SANFORD, M. D.  
TORALD SOLLMANN, M. D.

G. N. STEWART, M. D.

---

## EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.  
*Vice-President*, C. E. BRIGGS, M. D.

*Secretary*, C. A. HAMANN, M. D.  
*Treasurer*, H. G. SHERMAN, M. D.

---

## BOARD OF DIRECTORS

C. E. BRIGGS, M. D.  
F. E. BUNTS, M. D.  
G. W. CRILE, M. D.

C. A. HAMANN, M. D.  
C. F. HOOVER, M. D.  
S. H. LARGE, M. D.  
J. B. MCGEE, M. D.

J. P. SAWYER, M. D.  
H. G. SHERMAN, M. D.  
W. H. WEIR, M. D.

---

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

---

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

---

## EDITORIAL

### WANTED

Every subscriber to the *Journal* to read the advertising pages that appear each month in the *Cleveland Medical Journal*.

The physician who fails to read the advertisements in a clean, reliable journal, the official organ of his own profession, is standing in his own light. He fits the description of the advertiser so often given when speaking of members of the medical profession—"Unbusinesslike"—and he deserves it.

Do not consider it a waste of time to read the advertising pages of your *Journal*. We ask you to read these pages with the same intelligence and discrimination that you give to its reading pages. We should like to impress upon our readers that advertising is of just as great importance to the reader as it is to the advertiser. Advertising today is a great educator, it awakens the consumer to the study of intelligent consumption.

The *unintelligent* consumer looks upon advertising as just advertising, a means by which the producer with a subtle use of phrases is trying to induce the reader to buy something he does not want. In other words, "putting something over on him."

The *intelligent* consumer looks upon advertising as an open letter from the producer. He reads it, digests it, makes comparisons, takes it sometimes with a grain of salt, but always looks the copy squarely in the face and makes it answer all reasonable requirements.

So a well-written advertisement does not compel the reader to buy, but it does carry a message to him, perchance the very message he has been looking for. Suppose some reader of the *Journal* has been intending to buy a raincoat or some other commodity, has put off buying it from day to day for lack of time to run down the shopping details. In looking over his new *Journal* he finds the very article described and priced and located, in a way that makes it possible for him, by the expenditure of a few moments in the shop to verify claims made for the article and finding it satisfactory, to buy it. Then if the purchaser has that high order of intelligence we are looking for, he will be sure to inform the salesman or the head of the department that the firm's advertisement in the *Cleveland Medical Journal* did the business.

At great expense, advertisers are studying your needs in the many commodities in daily use, are preparing new and better remedies, and then are spending additional money to tell you about them in advertising. How is the public to be benefited by these suggestions or the merchants satisfied with their advertising expenditures if *Journal* readers are not keeping themselves informed by reading the advertising pages?

The subscriber gets his *Journal* for something less than one-third what it costs to publish it, so that it is from the advertising pages we must expect to get our greatest return.



A whole host of new advertisers are available for the *Journal* pages. The business office is on the alert to get every one of them. But our subscribers must support us by a sound business appreciation of the advertisers' point of view. Business is business and the advertiser cannot afford to throw away his money. Ephemeral advertising cannot be expected to bring any but ephemeral results, but we have many permanent advertisers, those who have taken a lasting stake in your *Journal*, who have been pounding away at your intelligence for months and even years at a stretch, trying to gain your confidence and patronage with the hope of making a lasting impression.

The general public, including men in the medical profession, often take the attitude that they are at liberty to buy where they see fit. Legally, of course, anyone can spend his money where he wants to, but nevertheless there is an obligation to spend it largely in Cleveland and a double obligation to spend it to the benefit of the advertisers in your *Journal*. "Twentieth century business is constructed on the principle that no exchange is a profitable exchange unless it benefits both parties."

The most practical kind of boosting the individual can do it to spend his money in his home town. If he be a member of the medical profession and wants to see his dollar again, then let him spend it in the shops advertised in the *Cleveland Medical Journal* and remember to state that the business is sent their way because they advertise in your *Journal*.

We are at the present time in the midst of a campaign for new advertisers. In spite of the war and all pessimists to the contrary, we find things are coming our way. Give us your support at this time. Patronize our advertisers. Talk about your *Journal* to merchants, banks, business institutions of all kinds not now represented in our advertising pages. Let us prove to the advertisers that we are thoroughly *businesslike*.

Boosting is the Price of Progress.

R. F. S.

## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. McGee, M. D., Cleveland.

**Tuberculosis:** Edward R. Baldwin, in the June number of the *American Journal of the Medical Sciences*, writing upon immunity in tuberculosis, emphasizes certain points from which he concludes: 1. There is no natural immunity to tuberculosis in warm-blooded animals to the types of bacilli found in the bovine or human race. 2. There is a considerable variation in resistance in some species, probably due to the chemical effect of their secretions or physiological differences in the animals, but chiefly to the fact that the bacillus has not become adapted to long-continued parasitic existence in them. 3. In the human species no natural immunity is found in any race. All uncivilized races long removed from infection are very susceptible, but the white races, especially the European Jews, have acquired a certain degree of immunity by inheritance and almost universal infection. The rapid increase of intercourse between all lands and races facilitates the universal spread of tuberculosis which is certain to occur through the medium of numerous bacillus "carriers." 4. The ultimate survival of those who acquire a relative immunity will tend to diminish the severity of the disease, but many generations may be required to accomplish this. 5. The opportunities for infection now universal in cities will diminish gradually in civilized lands by lessening the danger from advanced cases, also from bovine sources. For many years, however, the number of "carriers" will increase, owing to improved care, longer life and higher standards of living among the people. 6. The best degree of resistance against tuberculosis that has been attained by experiments on the lower animals involves inoculation of living bacilli. This is of little value, because of short duration of the protection and the danger of sequestered bacilli. 7. The natural infection of human beings takes place largely in childhood, and increases the resistance to subsequent disease in a large measure. Under improved care of the tuberculous and better hygiene, the amount and frequency of severe infections should diminish while the number of those with slight, relatively harmless infections should relatively increase. 8. Adults withstand exogenous reinfection under extreme exposure, partly on account of slight infections in earlier life and favorable occupations, environment and nutrition. 9. The specific immunity acquired from natural infection is largely due to cellular reactions of bacteriolytic nature, which take place outside the blood stream for the most part. 10. The interaction between the ferments of the body cells and those of the bacillus lead to heightened activity of the lytic power, both lipolysis and proteolysis. 11. The tuberculin sensitiveness or "allergy" is the chief indication of specific resistance. In the patient most of the inflammatory symptoms are due to the actively working immunity functions. 12. In the therapy of tuberculosis this principle should be applied: To avoid interference with nature's powers of resistance when she is attempting to localize the infection with apparent success.

---

**Parotitis:** In the April number of the *Quarterly Journal of Medicine*, Anthony Feiling gives a critical review of mumps. Though mumps may be regarded as one of the commonest infectious diseases, its usual benign course has tended perhaps to divert the attention of medical observers from what is in reality a disease of great interest. With the increase of bacteriological knowledge of the last ten years, attention has not unnaturally been focused on more serious and disabling infections, and it is only quite lately that any advance at all has been made towards the discovery of the infective agent in mumps. Simultaneously the numerous complications which may occur, and particularly those involving the central nervous system have been the subject of much study.



Review of the more recent literature would certainly open the eyes of many whose conceptions of mumps had previously been somewhat restricted. While generally characterized by acute inflammation of the parotid gland on one or both sides, the disease may occur without it, so that the old time-honored name of mumps has a better claim to general use than that of epidemic parotitis. One attack usually confers lifelong immunity. He has found great difficulty in proving authentic cases of a second infection. He groups the complications apt to occur as abnormal modes of onset, (2) orchitis, (3) pancreatitis, (4) nervous complications, (5) affections of special sense organs, (6) nephritis, (7) certain rare complications. As to orchitis, of all complications orchitis, or metastasis to the testicles as it was formerly called, is undoubtedly the commonest. Its frequency has been variously estimated; the proportion of cases attacked bears a constant ratio to the ages of the patients; boys under puberty may be said to be practically exempt. Catrin states that when males of all ages are included orchitis occurs in sixteen per cent. It may be the first manifestation, more often it occurs during the height of the disease. It is an old observation that orchitis seldom occurs in patients who are kept in bed a full week. Dukes, however, in one epidemic found, contrary to his previous experience, that out of 30 cases, 20 per cent developed orchitis though all had been confined to bed for eight days. Opinions vary as to whether the body or epididymis is first involved. Usually one testicle only is attacked. The serious part of the orchitis is, of course, the subsequent atrophy of the testicle which not unfrequently follows. Statistics are lacking, but the number followed by atrophy is certainly considerable; occasionally, as in a case of Lebonillet atrophy succeeds very rapidly, even in three weeks. In a case observed by Feiling himself, complete atrophy seemed to have occurred in six weeks. As to meningitis as a complication, Roux concludes (1) that while meningeal symptoms are frequent, typical meningitis is rare, (2) that it generally occurs at the height of the disease, but on rare occasions may even precede the parotid swelling; (3) there is almost always a very marked lymphocytosis of the cerebrospinal fluid; (4) the symptoms usually subside rapidly. As to treatment, no known remedy is available, which has any direct control over the course of the disease. In all cases rest in bed should be insisted on till all swelling of the glands has disappeared; in this way complications may possibly be averted. In adult males this injunction is specially important to avoid orchitis; rest in bed should be enjoined for at least eight days; even then a certain number of cases will be affected by it. The usual principles as to regulation of the bowels and diet and a gradual return to the duties of ordinary life hold good as in other febrile diseases. Complications are dealt with symptomatically as they arise. Three weeks is an ample period of isolation.

---

**Gallstones:** In the *New York Medical Journal* for June 5, Beverley Robinson states that in our practice among people past middle life we are constantly finding cases which give premonitory symptoms of gallstones. Frequently there are merely so-called dyspeptic symptoms, which are not characteristic. Again they give evidence clearly of what threatens, and if properly heeded, will probably prevent many later troubles. Among these he names two especially: First, the nausea and vomiting after a meal in which some food usually rich in fat has occasioned the upset; second, during or immediately after a meal, particularly dinner, there is a sudden call to the closet, and a diarrhetic attack occurs. With both these manifestations, there is often much chilliness, or a feeling of faintness. Moynihan and Chauffard notably, have insisted upon these and other symptoms usually assigned to the stomach, which are undoubtedly caused by the presence of gall-

stones. As to management, this differs somewhat with the patient affected, mainly in view of his occupation and social position. If the patient is a man or woman of small means and unable to be absent from daily work; if after several weeks of intelligent and careful treatment, as far as may be, the dyspeptic symptoms remain the same or are aggravated, and one or more attacks of biliary colic supervene, it would seem injudicious to postpone an operation, provided that the services of a skilled surgeon can be had, and hospital care may also be secured. In the case of the well-to-do it is different. Medical treatment continued, either at home or abroad at a spa, will not usually cure, but it will many times, as we know, make the annoying symptoms far less for weeks and months. In a similar way, it may prevent for a while the outbreak of another attack of biliary colic. Without accurate explanation of why it is, it is believed by many clinicians that small, frequent doses of calomel are very useful, especially when there are acute symptoms of fever and marked local pain. In all cases where there is even a suspicion of infection of the bile, by either the colon bacillus or some other organism as that of Eberth, moderate doses of salicylate of sodium or hexamethylenamin should be given regularly for some days. In this way, no doubt, the bile is affected favorably, and even when cholecystitis has begun, as shown by local pain or tenderness, independently of acute biliary colic, they lessen the inflammatory condition.

---

**Acidosis:** In the April number of the *Archives of Diagnosis*, Walter D.

Ludlum defines acidosis as a condition demonstrated by the presence of acetone in excess and diacetic acid in the urine, thus suggesting their pre-existence in the blood and tissues. At the present time it is not even known, so far as he knows, whether these and allied substances are responsible for the symptoms seen or are mere indices and concomitants of the actual causes. At least it can be said that these two substances and Beta-oxybutyric acid are present in such states of acidosis and are our easiest index to its occurrence. Acetone is a normal constituent of the urine, but in minute quantity, and as an indication of acidosis it is present in excess; oxybutyric acid is an intermediate product in the catabolism of the fatty acids, while diacetic acid is an irregular and adventitious product. Whatever the real cause of acidosis, the presence of these bodies in the urine would at least indicate an inadequate oxidation of usually the fatty acids by reason of a deficient supply of alkali. The condition usually occurs where there is an insufficient supply of carbohydrate, or inability to utilize it, and this means a great variety of conditions, such as malignant growths, starvation, post-operative, etc., but in children chiefly cyclic vomiting and other recurrent disorders. Frew in the *Lancet* drew the following conclusions: that acetonuria is common in childhood; that it is due to carbohydrate starvation, usually caused by failure of digestion, not by lack of supply; that this loss of digestive capacity may be due merely to change of diet; that it is more easily caused the younger the child; that three days are required for the accommodation of digestion; that disease has little effect. When we find recurring attacks of any condition in a child from two to ten years of age, less often below or above those ages, especially if it be recurrent vomiting or bronchitis, and particularly if the latter has an asthmatic character, it would be worth while to look for acetone and diacetic acid. Medicinally the treatment lies in alkaline medication: bicarbonate of sodium typically, or sodium or potassium citrate with at times salicylates. These measures seem to work. It is almost superfluous to mention the virtues of fresh air, baths, rest and exercise adjusted with emphasis on the rest, climate and all hygienic measures; lack of excitement and undue activity is important. He suggests that acidosis or acetonemia is a common condition in childhood, that the



transient presence of acetone in the urine is often unimportant, but yet definitely significant; at other times, it is both important and significant. That acidosis occurs in childhood, most often in conditions with a tendency to recurrence. That it will be instructive and interesting to watch for it, and find as fully as possible its associations and significance.

---

## NEW AND NONOFFICIAL REMEDIES

Since the publication of *New and Nonofficial Remedies*, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

**Cephaeline.**—An alkaloid obtained from ipecac. It is relatively more emetic and less nauseant than ipecac and causes more renal irritation and less cardiac depression. It may be used as an emetic and expectorant. It is insoluble in water, but forms water soluble salts.

**Syrup Cephaeline, Lilly.**—A non-proprietary preparation containing cephaeline hydrochloride, equivalent to  $\frac{2}{5}$  grain cephaeline per fluid-ounce. Eli Lilly & Co., Indianapolis, Ind. (*Jour. A. M. A.*, June 19, 1915, p. 2067.)

**Ouabain Ampules, (H. W. & Co.).**—Each ampule contains 0.5 mg. crystallized ouabain. Hynson, Westcott & Co., Baltimore, Md. (*Jour. A. M. A.*, June 19, 1915, p. 2067.)

During June the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with *New and Nonofficial Remedies*:

Antiseptic Supply Co.:

Special Caustic Applicators 50%.

Fairchild Bros. & Foster:

Enzymol.

Eli Lilly & Co.:

Syrup Cephaeline, Lilly.

---

## BOOK REVIEWS

**Diabetes Mellitus.** By Nellis B. Foster. J. B. Lippincott, Philadelphia. Pages, 240. Price, \$3.00.

During the past few years the literature bearing on the various intricate phases of this subject has grown to great volumes. Men have worked unceasingly in a effort to unfold the many mystifying problems of diabetes. Many of these points have been cleared away, and the experimental work that has been responsible, offers some of the most brilliant achievements of modern medicine. While researches have not been as fruitful to an exact understanding of the condition as it has been in other lines, yet that does not mitigate the responsibility of the profession at large from knowing the truths that have been established, and bestowing the benefits of them upon those who are in need. But unless one be especially interested in this subject, it would hardly be possible to cover the literature that is appearing so regularly in all scientific publications.

Foster appreciated these points and set about to give to the profession a book which would present them with a brief insight into the various realms of this most interesting subject, yet one that would not be of such length and detail that it would tire or bewilder. His attempt was a critical review of the established facts, and not the promulgation of a postulate. He has taken the subject up in logical sequence and has

given sufficient data to clarify many of the points. His bibliography has purposely not been made large, but he has furnished sufficient references, that if they be pursued by those whose interests have been aroused, will open the way into a great mass of interesting masterpieces by men who stand out as the pioneers in carbohydrate metabolism.

The chapter on treatment is particularly good. The long lists of various diets that are more or less characteristic of almost every therapeutic endeavor on this subject are wanting. Instead, the author has given a few fundamental principles and scientific truths. However, he has made the course plain, and has supplied a very clear and concise *modus operandi* for arriving at the exact status of any given case, and has supplied sufficient rules and data on food values, that any physician who will devote a few minutes of his time to this work, can feed and care for his patients in a commendable manner. It has been so in the past, that doctors looked upon diabetic patients as more or less hopeless cases and too often they have been content to dispose of them with the admonition that they were not to eat any starchy food or sugar, passing a sentence on an afflicted patient to a life of fat and protein is not a pleasant reflection, and all the less so since it is probably never necessary. This is a bitter truth, that many are still being so disposed, and these poor unfortunates are forced to go on in their misery, be it from the unquenchable thirst, or a severe pruritus. We now know that delay in the proper treatment of these cases is derelict, just as it is in the luetic. It is rather unfortunate that the author has failed to include the starvation routine as outlined by Allen, and used with such brilliant results in many places, but perhaps the book was in press before the stamp of approval could be placed on this procedure.

A few minor errors may be noticed, and an occasional sentence where the meaning is not quite clear. However, if one thinks over the enormous bulk of literature bearing on this condition, then looks at the small condensed volume that Foster has given us, one wonders how he made it so concise, yet is unable to see where there is necessity for saying more. It is admirably well done, and it is a little volume that we can heartily recommend to all.

C. D. C.

---

**Surgery of the Blood Vessels**—By F. Shelton Horsley, M. D., F. A. C. S., Surgeon in charge of St. Elizabeth's Hospital, Richmond, Va. A volume of 304 pages, with 89 illustrations, 77 of which are original. C. V. Mosby Co., St. Louis, 1915.

The introduction by the author reviews in chronological order the contributions to vascular surgery by American surgeons. He outlines the purpose of the monograph which deals with various phases of blood vessel surgery, and particularly with its recent developments. Its aim is to present the scientific and laboratory features of vascular surgery and particularly its practical aspects that are of interest both to the surgeon and to the general practitioner.

The treatment of hemorrhage, pathologic and traumatic, and such subjects as aneurisms, thrombosis and embolism, congenital nevi, varicose veins and hemorrhoids is described, as well as the history and technique of suturing blood vessels and the transfusion of blood.

A large part of the book is given up to the original work of the author. His methods of end-to-end suture of blood vessels, of transfusion of blood, of lateral suture of blood vessels, of suturing arterio-venous aneurisms, of making an Eck fistula, of transplantation of the anterior temporal artery, and of resection or transplantation of intestine after embolism of the mesenteric arteries are described in considerable detail. The author begins by a clear, concise description of the histology



and healing process of blood vessels. In describing his own work he gives a very clear idea of the individual steps in technique of the various procedures as end-to-end suture of blood vessels, transfusion, etc. He states the indications and contra indications for the different operations, and gives statistics of results which show the value of his methods.

He does not do much theorizing; he states facts, methods and results and does so in such a practical way that it is well worth reading. The author has reviewed the literature carefully and the volume is up-to-date in every detail.

The reviewer takes pleasure in recommending its careful reading by all those in any way interested in this important subject. E. P. M.

**The Practical Medical Series**, comprising ten volumes on the year's progress in medicine and surgery, under the general editorial charge of Charles L. Mix, M. D., Professor of Physical Diagnosis in Northwestern University Medical School, and Robert T. Vaughn, Ph. B., M. D. Volume VIII *Materia Medica and Therapeutics*, Preventive Medicine, Climatology, edited by Geo. F. Butler, Ph. G., A. M., M. D., Henry B. Favill, A. B., M. D., Norman Bridge, A. M., M. D. Series 1914. Chicago. The Year Book Publishers.

This number of the Practical Medicine Series considers, under the Department of *Materia Medica and Therapeutics*, drugs, animal extracts, serums and vaccines, and electricity, radium, etc. Preventive medicine is treated under the heads of infectious diseases, industrial and social diseases, general sanitation, etc. While the chapter upon climatology closes the volume, the book covers quite completely the progress in these subjects during the past year, and is a most convenient little work for reference. J. B. McG.

**Materia Medica and Therapeutics**—A text book for nurses. By Linette A. Parker, B. Sc. (Columbia University), R. N., etc. Illustrated with 29 engravings and 3 plates. Lea & Febiger, Philadelphia and New York, 1915.

This is a very satisfactory summary of the uses of drugs, from the nurse's viewpoint. The first 50 pages are devoted to pharmacy, the essentials of weights and measures, methods of making solutions, etc., being here presented. This is followed by an introduction to the study of drugs, including their method of administration, as well as a chapter on toxicology. Part III takes up the study of drugs in a miscellaneous way and Part IV considers drug action by systems. This is supplemented by Section V, which is devoted to topics for review, drugs of minor importance, prescriptions, hydrotherapy, radium, etc. The book is one of the best of its class and is daintily bound; the illustrations are good, and the colored plates excellent. J. B. McG.

### ACKNOWLEDGEMENTS

The Clinical Anatomy of the Gastro-Intestinal Tract. By T. Wingate Todd, M. B., Ch. B., F. R. C. S. (Eng.); Henry Wilson Payne Professor of Anatomy in the Western Reserve University, Cleveland, Ohio; late Lecturer in Anatomy, University of Manchester. Longmans, Green & Co., London, New York, Bombay, 1915. Price \$1.75, net.

*Therapeutics of the Circulation*. By Sir Lauder Brunton, Bt., M. D., D. Sc., LL. D., (Edin.), LL. D. (Aberd.), F. R. C. P., F. R. S., Consulting Physician to St. Bartholomew's Hospital. Second Edition with Illustrations. Paul B. Hoeber, New York, 1914. Price \$2.50, net.

**The Treatment of Gonorrhea and Its Complications in Men and Women.** For the General Practitioner. By William J. Robinson, M. D., Chief of the Department of Genito-Urinary Diseases and Dermatology, Bronx Hospital and Dispensary; Editor The American Journal of Urology, Venereal and Sexual Diseases; Editor of the Critic and Guide, etc. Critic and Guide Company, New York, 1915. Price \$2.50.

**The International Medical Annual.** A Year Book of Treatment and Practitioner's Index. Thirty-third Year. William Wood & Company, New York, 1915. Price \$4.00, net.

**Occupational Affections of the Skin.** A brief Account of the Trade Processes and Agents which Give Rise to Them. By R. Prosser White, M. D., Ed., M. R. S. C. Lond. Life Vice-President, Senior Physician and Dermatologist, Royal Albert Edward Infirmary, Wigan; Vice-President, Assoc. Certif. Fact. Surgeons; Life Fellow, London Dermat. Society, etc. Paul B. Hoeber, New York, 1915. Price \$2.00, net.

**What Every Mother Should Know—About Her Infants and Young Children.** By Charles Gilmore Kerley, M. D., Professor of Diseases of Children, N. Y. Polyclinic Medical School and Hospital. Paul B. Hoeber, New York, 1915. Price 35c.

**War Surgery.** By Edmond Delmore, Médecin Inspecteur Général De L'Armée; Ancien Président Du Comité Consultatif De Santé De L'Armée; Membre De L'Académie De Médecin, Membre et Ancien Président de la Société de Chirurgie. Translated by H. De Méric, Surgeon to In-Patients, French Hospital, London. With Illustrations. Paul B. Hoeber, New York, 1915. Price \$1.50, net.

**Medical Ethnology.** By Charles E. Woodruff, A. M., M. D., Author of "The Effects of Tropical Light on White Men" and "Expansion of Races;" Associate Editor of American Medicine; Lieutenant-Colonel, U. S. Army, Retired, etc. Rebman Company, New York.

**The Medical Clinics of Chicago.** July, 1915, Vol. I., No. 1. Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London. Six numbers a year; price per year, \$8.00.

**Operative Gynecology.** By Harry Sturgeon Crossen, M. D., F. A. C. S., Associate in Gynecology, Washington University Medical School and Associate Gynecologist to the Barnes Hospital, etc. Seven hundred and seventy original illustrations. C. V. Mosby Company, St. Louis, 1915. Price \$7.50.

---

## MEDICAL NEWS

**Death of Major Woodward.**—Notice has been received from the west of the death of Major R. N. Woodward of the United States Marine Hospital Service. Major Woodward will be remembered in Cleveland for his abilities as a Surgeon and his qualities of fellowship. About 1894 to 1897 he was in charge of the Marine Hospital Service in Cleveland and at the same time lectured on Clinical Surgery at Western Reserve Medical School in the amphitheatre of the old Marine Hospital before the present Lakeside Hospital was built. Since leaving Cleveland he has been stationed at several points of responsibility, viz: Reedy Island Station, Philadelphia, New York, New Orleans, and finally in San Francisco, where he was in charge of the Exposition Emergency Hospital at the time of his death.

Major Woodward was fifty-four years of age, was born in Laurenceville, Indiana, and was graduated from the Miami Medical College, Cincinnati, Ohio, in 1887. After graduation he entered the Marine Hospital Service now the Public Health Service. In 1889 he was promoted to the rank of Surgeon and Major.

He died at Rochester, Minn., following an operation for gall bladder disease. He is survived by his father, who is ninety-three years old, his



widow, one son, Wilber Woodward, a civil engineer, living in Honolulu, and his daughter, Gertrude, a senior at the University of California.

Major Woodward was only stationed temporarily in Cleveland, yet he entered into the medical life of the city with great interest and influence. He was one of the early members of the Academy of Medicine, was always an entertaining, clear and forceful lecturer in surgery and gave the students many practical hints in his clinical talks. His qualities of fellowship were shown in his great ability as an after-dinner speaker. His handling of anecdote and story has charmed many a Cleveland audience. His old friends in Cleveland will have many and close memories of the man and regrets for his early death.

**With the British Expeditionary Force in France.**—Dr. A. W. M. Ellis, whose home is in Toronto, and who formerly spent a year at Lakeside Hospital as Pathologist, afterwards spending several years at the Hospital of the Rockefeller Institute, is now a Captain in the medical corps of the Canadian army with the British Expeditionary Force in France. Dr. Ellis is also one of four men in charge of the Canadian Mobile Laboratory.

---

**The Use of Words.**—The subject of the Chairman's address before the Section on Practice of Medicine at the late meeting of the American Medical Association of San Francisco, by Doctor Thomas McCrae, Philadelphia (*Journal A. M. A.*, July 10, 1915), was the use and abuse of words. He called attention to the many disputes which has arisen where the use of words was involved, and held that we should use a rigid standard, especially in medical matters. Many people have their own peculiar conceptions of terms, and words are given attributes they do not possess. For example, the word pneumonia involves quite a variety of conceptions in the minds of different persons. In a meeting of medical teachers ten years ago the terminology of the diseases of the chest was discussed and the varied meanings attached to the same term brought out in the discussion surprised everyone. Much difference of opinion will be found in the use of the words bronchial and tubular, and students have been graduated for years with erroneous ideas as to the meaning of a certain term. Many illustrations are given by McCrae as to the misuse of the names of diseases and symptoms. He says if one wishes to find confusion worse confounded let him read an article in French or German dealing with arthritis. What the term rheumatism means in many of these no one but the author can tell. The use of the word rheumatism leads to careless diagnosis, and the list of diseases and conditions which have been classed under this head is a long one. The word phthisis is another misused term, as well as Bright's disease, asthma, bilious and biliousness, typhoid, hysteria, et cetera (all of which have numerous meanings), and many others which need to have some attention as to clearness in regard to their use. For those who are teachers the duty of accuracy in the use of words is important. How can definite ideas be conveyed by indefinite terms? For proper therapy it is equally important to have clear ideas. Treatment directed to a name is not likely to help the patient. When so much depends on the choice of terms is it not worth while to use them with care and precision?

**OHIO STATE BOARD EXAMINATIONS**

Held at Columbus, June 8, 9, 10 and 11, 1915

**Physiology**

1. What four structures enter into the formation of joints? Describe two of them.
  2. Explain what is meant by tonicity of muscle.
  3. What general digestive purpose is served by vegetable acids, and what ill effects are observed by the ingestion of too large amounts of them?
  4. What are the functions of the lymph?
  5. Describe origin, distribution and function of the vagus nerve.
  6. Describe two methods of determining arterial blood pressure in man.
  7. Describe the succession of events in the thorax during inspiration and expiration.
  8. Describe tendon reflex; name principal forms.
  9. Bound the area of taste and describe the taste buds.
  10. Describe the functions of the internal ear.
- 

**Chemistry**

1. Describe concisely one test for albumin and one for sugar in the urine. Upon what chemical action is each based?
  2. How would you determine the amount of urea in urine? Describe a test for indican in urine.
  3. Give a brief outline to determine the fitness of water for drinking purposes.
  4. Give formula for ethyl alcohol; methyl alcohol; from what is each made?
  5. Differentiate the chlorides of mercury, naming properties, actions and characteristics.
- 

**Anatomy**

1. Name the superficial muscles of the back.
  2. How many spinal nerves? Which is the sensory and which the motor root?
  3. Describe the structure of the stomach.
  4. Describe the larynx.
  5. Describe the left subclavian artery.
- 

**Pathology**

1. What morbid condition in the mouth gives rise to systemic diseases; mention some of the latter and the manner of their production.
  2. What are the morbid changes in the cord in tabes dorsalis? In infantile paralysis?
  3. Give pathologic findings in pernicious anemia.
  4. What pathologic condition may arise from the presence of gallstones? Of renal calculus?
  5. What is the normal average amount of urine voided in twenty-four hours? What diseases cause an increase? Give clinical findings in each.
- 

**Materia Medica and Therapeutics (Regular)**

1. For what purposes are diuretics employed? Name three and mention doses.
2. What symptoms follow the continued use of cocaine and morphin? How would you treat the habitué of each?



3. Name three medicines used hypodermically and state the precautions to be observed.
  4. Name two cardiac stimulants and two cardiac sedatives. Describe physiological action and write a prescription for each.
  5. What preparations of mercury are employed as cathartics? Mention dose of each.
  6. What are the uses of narcotics? Name the principal ones and mention doses.
  7. What is the source of ergot? Describe its physiologic action. Mention its principal uses.
  8. Nitroglycerin—give physiologic action; therapy and dose.
  9. Name some conditions in which the bromides are indicated and your method of giving them in large doses.
  10. Define external antiseptic agent. Name two important ones and explain how they are used.
- 

### **Materia Medica and Therapeutics (Eclectic)**

1. Mention usual dose and indications for gelsemium.
  2. State briefly the indications for the use of passiflora, eryngium, and saw palmetto.
  3. Mention some conditions in which you would use codeine and heroin, and state dose of each.
  4. What are the indications for the use of quinin; when is it contra-indicated?
  5. What is podophyllin; when is it indicated?
  6. Name chief alkaloid of nux vomica; give its dose and therapeutic uses.
  7. State briefly indications for the use of phytolacca, veratrum, ergot.
  8. Mention prominent symptoms of poisoning by opium, corrosive sublimate. Name antidotes.
  9. When is the hypodermic use of lobelia indicated? Give dose.
  10. When would you use antitoxin? Mention doses and describe method of use.
- 

### **Diagnosis**

1. Define the limits of the liver by percussion and by palpation.
  2. When a general increase in the size of the liver is found, what does it denote?
  3. How can you make diagnosis of amebic dysentery?
  4. How is the spleen examined? What pathological conditions does a uniform enlargement of this organ indicate?
  5. In what affections of the stomach is haematemesis present?
  6. Mention physical signs of mitral incompetency.
  7. What physical signs denote chronic bronchitis?
  8. Dyspnoea—mention its types and state in what pathological conditions it is found.
  9. How do you examine a patient for tremor? Mention its varieties and pathological significance.
  10. Aphasia—mention its varieties and the lesions which they denote.
- 

### **Practice**

1. What is artificial pneumothorax? What are the indications for producing it, and what local pathologic conditions interfere with its successful production?
2. In what conditions is high blood pressure found?
3. Given a case of a patient with a history of rheumatism several years ago, now complaining of swollen ankles, shortness of breath, cough and albuminuria, what would you suspect? Outline treatment.

4. How would you diagnose a case of incipient phthisis?
  5. Outline the treatment of a case of acute parenchymatous nephritis with threatening uremia.
  6. Outline the dietetic treatment of diabetes mellitus.
  7. What are the symptoms of a brain tumor situated on the right side in the middle fossa?
  8. Differentiate between a case of diabetic coma, uremic coma, and apoplexy.
  9. Give treatment for each in preceding question.
  10. Give causes and treatment of rickets.
- 

### Surgery

1. Name five principal points of diagnostic importance in abdominal examinations. Discuss significance of tension and tenderness of abdomen, from surgical point of view.
  2. Briefly state pathology, symptoms, diagnosis and treatment of acute vulvitis.
  3. Give symptoms and treatment of fracture of olecranon process.
  4. Outline a general plan of treatment for concussion of the brain.
  5. Give symptoms and treatment of subphrenic abscess.
- 

### Obstetrics

1. Give symptoms and treatment of puerperal eclampsia.
  2. Name the different displacements of the uterus and outline general treatment.
  3. What is the third stage of labor? Give in detail its management.
  4. What have you to say about the use of anaesthetics, in obstetrics, as to kind, time and method of administration.
  5. Outline the general preparation of patient and surroundings in a case of impending labor.
- 

### Dermatology, Syphilology and Diseases of the Eye, Ear, Nose and Throat

1. Define psoriasis. Mention its varieties. Outline its treatment.
2. Dermatitis—mention its causes. Give treatment.
3. How do you recognize scabies? Mention treatment.
4. Describe the initial lesion of syphilis. How can you prove its true syphilitic nature?
5. Outline the treatment of syphilis in the secondary period.
6. Define astigmatism. Give its symptoms and prescribe lenses for correcting the vision.
7. Describe iritis—name its varieties and outline treatment.
8. Describe otitis media purulenta, its results and dangers.
9. Describe atropic rhinitis. How is it treated?
10. Describe laryngeal tuberculosis.



# The Cleveland Medical Journal

---

Vol. XIV.

AUGUST, 1915

No. 8

---

## REPORT OF CASES OF HEMORRHAGIC CONDITIONS IN INFANTS

By JOHN PHILLIPS, M. B., Assistant Professor of Medicine, Western Reserve University, Cleveland.

The following cases of intracranial hemorrhage and other hemorrhagic conditions in infancy, seen during the past year, are considered of sufficient clinical interest to warrant this report.

Case 1, female child, born of healthy parents, was seen first January 6th, 1915. There was one other child in the family, a boy, three years old. The mother had no miscarriages. The present labor was normal, no instruments being used, and the child breathed normally immediately after birth. The birth weight was eight pounds; during the first two days the baby lost eight ounces, but gained one ounce a day for each of the succeeding five days. The infant nursed unusually well throughout this period. On the seventh day the baby refused to nurse as well as usual and regurgitated some of the breast milk. It was noticed in the afternoon that there was twitching of the right side of the face, right arm and right leg. This would last from one to two minutes and was repeated at hourly intervals throughout the night. The fontanelle was only slightly tenser than normal but did not bulge. The right pupil was much larger than the left, and there was slight paresis of the right side of the face. The diagnosis of intracranial hemorrhage on the left side seemed evident and the child was operated by Doctor C. E. Briggs, who found an extensive hemorrhage covering the entire left side of the brain. The child died at the end of the operation.

Case 2, male baby, aged 8 days, second child of healthy parents, seen July 25th, 1915, with Doctor John Sipher, of Norwalk. The labor was easy, and weight at birth was eight and three-fourths pounds. Until the fifth day, the infant seemed to thrive; at that time a small amount of blood was noticed in the stool. On the evening of the sixth day the baby had a

generalized convulsion, and, previous to this, it was noticed that the scrotum and penis were hemorrhagic. On the seventh day the child had another convulsion, and again on the morning of the eighth. In the intervals between the convulsions there had been periods of jerking of the hands and legs, and twitching about the right eye. Breathing had been irregular and there was frequent yawning. During the past two days the baby has almost entirely refused the breast and has gradually passed into a condition of stupor. Examination showed slight increase in the tenseness of the fontanelle, paresis of the external rectus muscle of the right eye, paresis of the right side of the face, and marked spasticity of both arms and legs. During examination the child had a generalized convulsion, in which the eyes and head were turned strongly to the right. The scrotum and penis were hemorrhagic. The child was in such serious condition that operation was not advised, and died a few hours later. The condition seemed without a doubt to be one of intracranial hemorrhage, possibly bilateral.

Case 3. Baby five days old, the first child of healthy parents, seen September 4th, with Doctor A. H. Bill. The baby weighed seven pounds at birth and since that time has lost 10 ounces. The delivery was not difficult, low forceps being applied in the late stage. For the past three days there has been slight bleeding from the vagina. Nothing else abnormal was noticed about the baby until ten hours ago the nurse noticed that the fontanelle was becoming tense and that the child did not take the breast so well. The last two feedings were regurgitated. Examination showed the baby to be very pale, temperature 102, pulse 160, respiration quite irregular and accompanied at times by yawning. The fontanelle was very tense and bulging. The right pupil was widely dilated, the left normal size. There was some twitching about the left eyelid, and slight paresis of the right side of the face. The arms were flexed at the elbows and the fingers clenched on the thumbs. Both legs were quite flaccid. The diagnosis of intracranial hemorrhage was made and Doctor G. W. Crile opened the skull on the left side. The child was in such serious condition that no attempt was made to remove the clot, the child dying at the end of operation.

The most interesting feature of the three cases described above is the late appearance of the symptoms. It would suggest that the hemorrhage was not due to trauma at birth, but that its occurrence was coincident with the appearance of the symptoms.



In that case the cause in all probability is similar to that in other cases of hemorrhagic conditions of the new born, such as the hemorrhages from stomach and bowel, and in reality is due to a defect in the blood itself or the vessel wall. In support of this theory in Case 2, there was bleeding from the bowel and into the scrotum, while in Case 3 there was some bleeding from the vagina. This would suggest the possibility of its prevention in some cases by the administration of serum, with the slightest bleeding from the bowel, stomach, vagina or other membranes. Another feature worth emphasizing is the fact that bulging of the fontanelle, which is always mentioned as one of the most important physical signs, was not present in the first two cases, though in Case 1 we are certain that the hemorrhage was very extensive. Operation should be attempted in all cases because if the child survives and the clot is not removed, mental or physical defects will result. In view of the occurrence, as stated above, of hemorrhage from other mucous membranes in association with intracranial hemorrhage, it would seem advisable to administer horse serum or do a blood transfusion as well as the cranial operation. Harvey Cushing has had very good success in some cases. In two of his cases, that were patients of the late Doctor Edward Cushing, the operation was unusually successful, and now at the age of eight and eleven years show no mental or physical defect from the intracranial hemorrhage.

The following case, seen November 28th, 1914, with Doctors Parker and Myers, of Mansfield, illustrates a hemorrhagic condition due to syphilis, seen in a baby, eleven weeks old. The father, several years before marriage, had a chancre. Their first child died two years ago at the age of four months, from congenital syphilis. At autopsy the liver and spleen were very large and all the viscera, including the bones, showed evidences of syphilitic infection. Both father and mother took anti-syphilitic treatment for three months, at this time. The mother had two miscarriages at six months, and her brother is insane. The baby seemed to thrive well until two weeks ago. At that time she developed snuffles and numerous petechiae appeared in various places over the body. Four days ago fissures appeared at the corners of the mouth, which bled profusely, and there was also bleeding from the mucous membrane of the nose and mouth. Physical examination showed the baby to be very pale and in a moribund condition. Blood was exuding from the fissures at the corner of the mouth and from the oral and nasal mucous

membranes. The right pupil was much larger than the left. There was slight general glandular enlargement. The lungs and heart were normal. There was a loud venous hum in the neck. The lower border of the liver extends to the umbilicus, and its surface was smooth but quite firm. The lower border of the spleen was on a level with the crest of the ilium. The testicles were not enlarged and there had been no haematuria. There was quite marked oedema of the shins. The palms of the hands and soles of the feet were quite scaly. The leucocytes numbered 77,000.

Hemorrhages from the mucous membranes, especially of the nose, are not uncommon in congenital syphilis. Fischl has reported seven cases of multiple hemorrhages in the newly born, associated with other symptoms of congenital syphilis. Mracek noted hemorrhages in thirty-three per cent of 160 autopsies on syphilitic still-born infants or those dying soon after birth. The high leucocyte count, together with the great enlargement of the spleen and liver, would suggest leukaemia, but these findings are all consistent with the diagnosis of congenital syphilis.

The two cases next to be reported are examples of hemorrhage in the new born.

Case 1. Female, born February 25th, 1915, the first child of healthy parents. The delivery was instrumental but comparatively easy. The birth weight was seven pounds, five ounces. Fourteen hours after birth a small streak of blood was noticed in the vomitus. On the third day after birth a large quantity of blood was passed by the bowel and there were subcutaneous hemorrhages in the tissues of the buttocks. The baby became very pale and weak. Two injections of 15 c.c.'s each of horse serum were given at an interval of four hours. The hemorrhage did not recur and the recovery was uninterrupted. At the present time the baby is six months old and weighs 15 pounds.

Case 2. Female, born July, 1915, seen July 9th, 1915, with Doctor Gittelsohn. Four days after birth the baby began to pass blood from the bowel, so that during the day several diapers were saturated. The bleeding continued in small amounts during the next two days. Serum was injected in amounts of 15 c.c.'s, being repeated four times in the next two days. The child made a good recovery.

One of the most striking advances in treatment in recent years is the serum treatment of the hemorrhagic diseases of new-born infants. These cases as a rule respond quickly to the



administration of serum, or, as Welch has shown, to injections into the buttocks of the infant of fresh blood drawn from the vein of the mother. Some cases that do not respond to these measures are cured by direct transfusion of blood. Where whole blood is used, from 10 to 30 c.c.'s are injected subcutaneously every four hours as long as the hemorrhage continues. Schloss and Comiskey report nine cases treated in this way. The studies of these two authors indicate that the condition is due to a deficiency or absence of thrombin or fibrinogen, which gives rise to imperfect blood coagulation and uncontrollable hemorrhage. In some cases there may be a localized vascular defect.

---

**Teaching of Hygiene.**—M. J. Rosenau, Boston (*Journal A. M. A.*, July 24, 1915), says it may surprise some to learn that hygiene is included as a major subject in the curriculum of only three medical schools in this country, the University of Pennsylvania, the University of Michigan and Harvard. The teaching of hygiene is becoming increasingly difficult owing to the widening of the subject, and it has been necessary to establish special schools for the training of hygienic experts for health officers. Sanitation and hygiene has become a separate profession. At Harvard, the teaching of hygiene consists of lectures and demonstrations, laboratory work, sanitary excursions, and sanitary surveys. The required course comes in the second year of the medical curriculum, and in addition a fourth year, elective, is offered for those who desire to go further into some phase of the subject. The backbone of the course is the laboratory work and the sanitary survey. This last was first used in the School of Health Officers of Harvard Technology and was later introduced into the course of preventive medicine and hygiene of the Harvard Medical School. Each student in medicine is required to make a sanitary survey of some city or town and submit a report. This must include collection of data, interpretation of the facts, and criticisms and recommendations. The outline which is placed in the hands of every student is given in the article. Boston is a good place for an exercise of this character, there being fifty-two cities and towns within fifteen miles of the state house. Students are encouraged to select small communities and, if possible, their own home town. Some students prefer to make the survey during their vacation. No special instructions are given, but he is placed on his own initiative. He is simply advised to get acquainted with the town and some of its people, find out something of its history, geology, geography and history and then go into details. The students have generally found the time and some of their reports are splendid contributions, and often enlivened with photographs. Some of them have carefully prepared charts and some have judicious summaries and well-considered criticism.

## TREATMENT OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM

By O. P. BIGELOW, M. D., Visiting Neurologist to the City Hospital, Cleveland.

The treatment of syphilis of the central nervous system is at present in a very unsettled state. Various intraspinous methods have their advocates; some observers believe that there is no advantage in intraspinous over intravenous use of salvarsan; and many deny that there has been any advance made over the old treatment with mercury and iodids.

The accompanying charts are submitted in order to show graphically the results of various methods of treatment, and especially to compare the action of mercury and iodids with that of the more modern remedies. Incidentally they are suggested as a convenient means of keeping a record of these cases.

### Watching Process of Case

It seems evident that the cell count is the best means of following the early progress of these cases. The Wassermann reaction and, to a less degree, the proteid content of the spinal fluid are so little influenced by the first few months of treatment that they have no value as indicators during this period; yet these first few months, often the first few weeks, determine whether the patient has a chance of recovery.

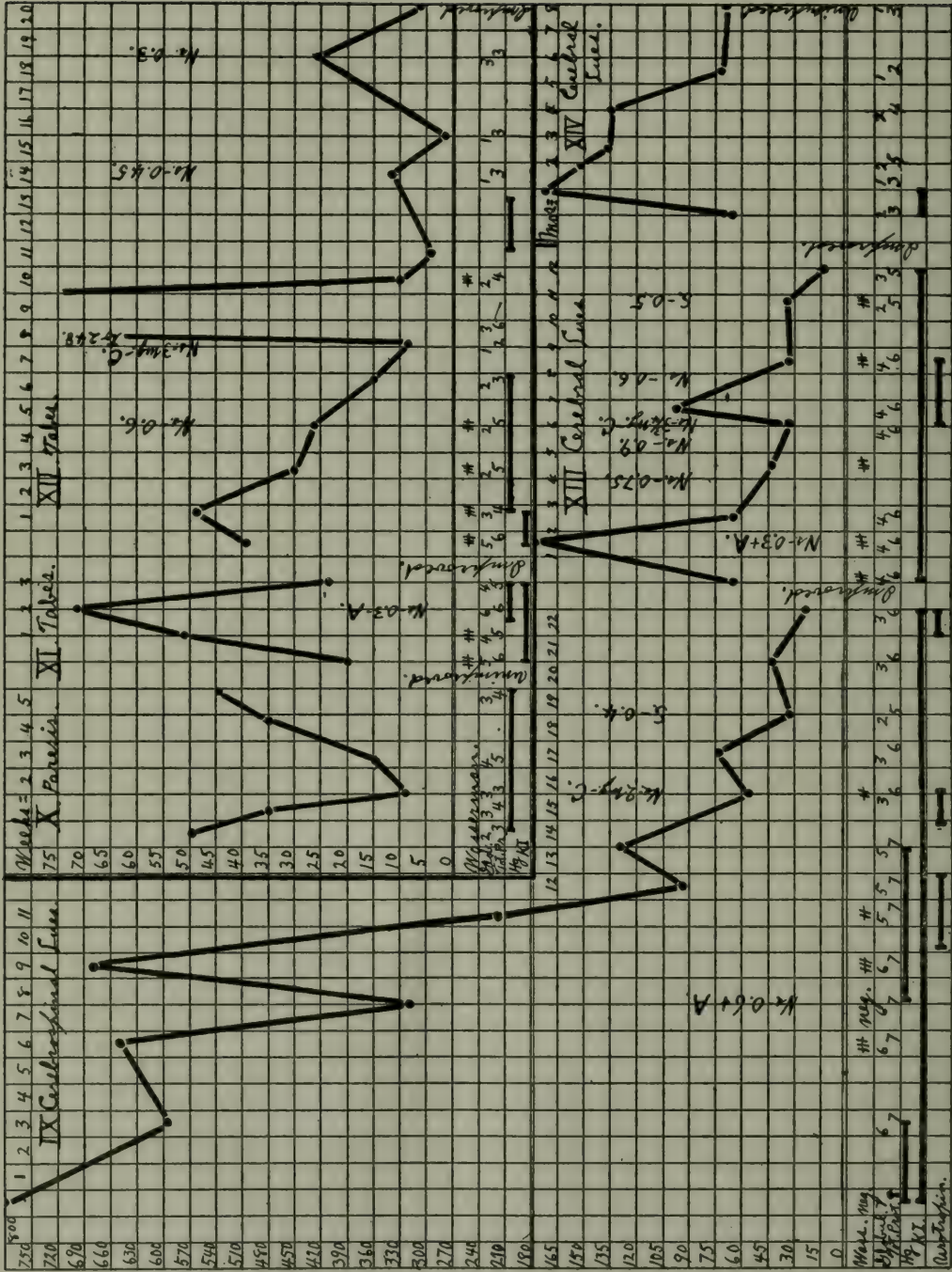
The clinical condition follows large variations in the cell count quite closely, except those produced by the use of iodids, and the irritative cell counts following intraspinous injections. In this series of patients Nos. 1, 5, 10, 15, 18, 19 and 23 all showed clinical improvement for a time, as the cell count would lead one to expect, but all were finally confined in state hospitals

There are included sixteen cases of cerebrospinal lues, six of tabes and three of paresis. Dots represent lumbar punctures. The height of cell count in the spinal fluid is measured by vertical spaces, the number of cells per cmm. being given at the left. Horizontal spaces represent weeks except in case 14. Wassermann reaction and proteid content appear under the corresponding cell count. Time and duration of treatment with mercury, potassium iodid and urotropin are shown by heavy lines at the bottom, intravenous and intraspinous injections, with the amount in grammes, on the body of the chart.

The tests for proteids were made by the method which I described in the *Cleveland Medical Journal* for November, 1914, i. e., by boiling the fluid with an equal amount of saturated solution mag. sulph. to obtain the globulin, then adding a few drops of commercial acetic acid and boiling again to obtain the total proteid content. Nos. 1, 5, 10, 14 and 15 are curves or portions of curves which have been previously reported in the *Journal*.











as hopeless cases. Nos. 2, 3, 6, 8, 9, 12, 13, 20, 21 and 25 were able to return home and to work. Their ability to continue will undoubtedly depend, in most cases at least, upon the care with which they are watched and treated for impending relapses. Especially striking improvement was noted in No. 3 after the third week, and No. 21 after the fifth week. In the latter there was some return of irritability and restlessness on each occasion when the cell count went up again. No. 4 is clinically well except for some urinary disturbance following the last intraspinal injection, but this is rapidly improving. Nos. 7 and 24 returned home much improved, but with some hemiplegia remaining. No. 11 was not treated sufficiently, and Nos. 16 and 17 are still under treatment, but much improved. Nos. 16 and 17 improved for about the first three weeks, then relapsed to some extent.

#### Urotropin

The use of this drug in other forms of meningitis suggested a trial in that of syphilitic origin. It seemed to have some effect in bringing down the cell count in case 9.

#### Iodids

The rise in cell count which follows the use of potassium iodid in large doses (Cases 5, 11, 12, 13 and 14), seems to confirm the idea that it breaks down syphilitic growths. This rise is less constant and less marked in paresis than in earlier stages of syphilis, which may be explained by the different character of the process, in the first case parenchymatous, in the second interstitial with profuse cellular infiltration.

I have never seen any clinical improvement in these cases which could be ascribed to the use of iodid, but, judging from its effect on the cell count, it seems worthy of a trial in combination with other remedies. Case 14 illustrates the effect of iodid alone. The count rose sharply while it was given, then took nearly five months to return to where it was before treatment. Mercury or neosalvarsan will usually bring it down again in one week (Cases 11, 12 and 13).

#### Mercury

This was given intramuscularly unless otherwise noted. Stopping it indicates salivation in almost every instance.

Mercury alone or with iodids usually causes the cell count to fall for the first two or three weeks of treatment, then the count ceases to fall or may rise again even higher than it was



before (Cases 1, 10, 15, 16 and 18). Sometimes the count rises or remains stationary from the first (Cases 3, 5, 8, 17, 19, 22, 23 and 24). Mercury seems, therefore, to be beneficial *for a time* in most cases, sparing the use during two or three weeks of more expensive remedies, and it probably reinforces them if continued (Case 13). But, alone it is insufficient to bring the cell count down to normal or even to keep it there after it has been reduced by other means (Cases 12 and 21). Laboratory findings sometimes become negative in the course of months or years after the use of mercury, but this may occur without any treatment as a result of the body's natural resistance. Often we cannot use mercury at all on account of its toxic action.

#### Salvarsan and Neosalvarsan

When, even under mercury, the cell count fails or ceases to fall an intravenous injection of one of these remedies will usually bring it down (Cases 17, 19 and 24). Or they will keep it coming down at a time, when, under mercury alone, we would expect the fall to cease (Cases 2, 4, 6, 7, 12, 16, 20, 21 and 25). If one of them fails or ceases to give results the other may have more effect (Cases 7, 13 and 21). Ten days seems a short enough interval between injections. Neosalvarsan seems to be at least as effective as salvarsan and freer from toxic action.

#### Intraspinal Treatment

The disadvantage of this method is the possibility of too much irritation, evidenced by pains, paresthesias and disturbances in urination, objectively by a temporary increase in cell count and proteid content in the spinal fluid. Pain and greatly increased cell count are not always associated (Cases 8, 9, 12, 13, 18, 20, 24 and 25). Also this method is more difficult than intravenous injections, and, therefore, more expensive in private practice. Here it seems unnecessary to use it if we follow the cell count and find that this can be brought and kept down by other methods of treatment. If this does not occur it is worthy of a trial; of the few cases presented here, for instance, Nos. 3, 16 and 21 show a definite advantage of intraspinal over intravenous medication alone. Others respond very well to combined treatment, but it is impossible to determine just how much improvement is due to each method. In hospitals the matter of expense is reversed, for here the contents of one ampule may be divided among any convenient number of patients for direct intraspinal injection, and still leave the amount practically undiminished for intravenous use.

As to the irritative effect of different methods, my experience from fifty-five injections in thirty-three patients, is as follows:

A. Nineteen Swift-Ellis treatments. Severe pain in 32%. Two patients had numbness of extremities lasting for over two weeks.

B. Three cases in which 2 mg. Ns. were added to the serum obtained as in A. No severe symptoms.

C. Six cases in which 2 to  $3\frac{3}{4}$  mg. Ns. were injected in 25 cc. of spinal fluid. Severe pain in 67%, bladder paralysis lasting for several weeks in one tabetic and for a few days in one tabetic and one paretic.

D. Twelve cases in which 2 mg. Ns. were added to blood serum, then to spinal fluid. Severe pain in two (in which only 3 and 10 cc. of serum were used respectively), i. e. in 14% if we include here the cases under B.

E. Fifteen cases in which 1 mg. S. was given by the Ogilvie method. Severe pain in 20%, bladder paralysis in one tabetic.

Direct injection of neosalvarsan dissolved in spinal fluid only is the most dangerous and painful of these methods. It seems safe to give 2 mg. neosalvarsan in 15 cc. or more of serum, 1 mg. salvarsan by the Ogilvie method or serum salvarsanized in vivo by the Swift-Ellis method, except that in tabes there is much probability of pain following the injection and a possibility of bladder paralysis. The Swift-Ellis method seems least likely to cause this last.

### Cerebrospinal Lues

The average patient requires six or eight weeks of intensive treatment before the cell count reaches normal. He is usually able to return home and to work at this time, but motor defects such as hemiplegia almost always persist in some degree. About four weeks later he should have another injection of salvarsan or neosalvarsan or at least a spinal fluid examination to see if it is needed, and this should be repeated at intervals, depending upon the reaction obtained, until the spinal fluid remains normal.

### Tabes

About the same treatment is required here. There may be much clinical improvement, especially as regards lightning pains, ataxia and sensory defects.

### Paresis

Temporary improvement in the cell count and clinical condition may occur. Neosalvarsan combined with small doses of mercury is much safer than intensive treatment with mercury alone, for this latter is often followed by severe salivation, maniacal states, and more rapid physical and mental decline in paresis.



### Conclusions

1. The cell count in the spinal fluid is the best means of following the early progress of these cases.
2. Mercury and iodids are insufficient in their treatment.
3. Salvarsan and neosalvarsan, combined with mercury, will usually stop the progress of the disease in cerebrospinal lues and tabes.
4. Combined intraspinous and intravenous medication sometimes succeeds where intravenous injections alone do not, but intraspinous treatment should be used with caution in tabes.

8911 St. Clair Avenue.

---

**Terminal Disinfection.**—In seeking suitable means of defense against epidemic diseases, the practices of sanitarians have been modified from time to time in accord with the dictates of the newest contributions of the science of hygiene. The development of the art of disinfection, so as to render infectious or contagious matter innocuous, promptly led to a widespread employment of procedures intended to accomplish the desired result. Fumigation is probably the most familiar of all the methods which have received extensive recognition, though it is by no means the only one or even always the most efficient process. Heat and antiseptic solutions have likewise found an extensive field of usefulness, particularly when the disinfection is intended to be applied in a restricted area or to smaller articles or surfaces.

A few years ago, terminal disinfection was the recognized routine after the more common infectious diseases, such as diphtheria, scarlet fever and tuberculosis. Within the past decade there has been a growing tendency in many quarters to abandon terminal disinfection. To understand this change of attitude it must be remembered that there is, in some degree, a natural process of disinfection going on in the environment of disease. Drying, exposure to sunlight, and other agencies are potent factors in bringing about the destruction of infection by processes of nature. Their efficiency increases in direct proportion to the length of time and the degree to which they are permitted to act. Chapin was among the first to advocate partial abandonment of terminal disinfection in certain diseases, such as diphtheria and scarlet fever, in the belief that "the conditions which surround organisms that have been discharged from the patient's body are unfavorable for their multiplication and that the decrease of the organisms, brought about by the processes of nature, is sufficient to reduce the number of remaining organisms to a negligible quantity."—*The Journal of the American Medical Association*.

## JACOB WORM MUELLER, ON TRANSFUSION A RETROSPECT

By TORALD SOLLMANN, M. D., Cleveland.

We look upon transfusion as a strictly modern procedure. We concede, of course, that it is a rather ancient practice, having had various waves of popularity; but these older attempts were mere crude blunders. It was only after the underlying principles had been scientifically investigated that transfusion could become the safe and certain process that it is today. The revival of transfusion had to be based on experimental investigations; and it is this union of the experimental with the clinical that justifies our classification of transfusion as a modern method of treatment.

However, the novelty on which we justly pride ourselves, does not consist in the experimental investigations, but in the clinical interest that they have now aroused. As a matter of fact, practically all of the essential scientific data which are now used in transfusion—except auto-hemolysis—were known forty years ago. Had they been properly appreciated by clinicians, transfusion could have been a scientific clinical method for two generations. Let us not forget that science is sometimes “impractical” merely because it is not practiced!

The occasion for these reflections was furnished by the casual reading of Worm Mueller's study on “Transfusion and Plethora,” published in the University Program of Christiana, 1875. Since this is not very accessible, it may be worth while to furnish an abstract. The reader who is familiar only with the modern literature will be surprised to find the extent to which this modern literature was anticipated. Nor must it be forgotten that there were scientific data even before Mueller.

---

Mueller starts with a review of his previous work on the effects of blood-quantity on blood pressure, et cetera. In this connection, he had found that changes of 25 per cent below to 30 or 50 per cent above the normal blood-quantity does not materially modify the blood pressure. With the more severe anemia, the injection of blood has a marked effect on the pressure. With more extreme plethora, pressure also remains unchanged, but other acute symptoms supervene.



The constancy of the blood pressure under transfusion, within the normal limits as stated, is shown to be due to adaptation of the vessels through the vaso-motor center.

---

The subject proper of the present study was the investigation of the further fate of the animals which had received moderate transfusions, the observations extending over weeks or months.

His results were as follows: Slow transfusion of even large quantities of blood, increasing the normal by about 80 per cent, were tolerated without any damage. This resulted only when the increase exceeded 150 per cent, but probably varies in different individuals.

Of the injected plasma, about a half has left the blood stream within a couple of hours; the remainder disappears more slowly, but returns to the normal within two to five days. The disappearance of the injected plasma is accompanied by increased elimination of urea, showing that the protein is metabolized and serves as a food. The corpuscles, on the other hand, persist in the circulation for a long time, but the injected corpuscles have a limited life, and are slowly destroyed, the normal corpuscle content being thus restored in perhaps three or four weeks.

The course is exactly the same whether fresh or defibrinated blood is transfused; the defibrinated blood may even be kept on ice for a day. The injection of defibrinated blood does not produce any significant change in the coagulability of the blood of the animal. Transfusion may therefore be made as successfully with the defibrinated blood as with fresh blood. Its use consists exclusively in the introduction of corpuscles. Practically none have disappeared in the first days.

Its principal indications are in excessive hemorrhage; after certain intoxications, for instance, carbon monoxide; and further in some chronic anemias, including leukemia. The indications should be sharply formulated, and the routine employment in all possible chronic infectious diseases is to be deplored; the cause of transfusion is not to be advanced by "Marktschreierisches Ausposaunen" of isolated cases, but by quiet and detailed investigation.

---

A further study deals with the injection of the blood of other species, specifically lamb's blood into dogs.

Here it was found that the injection of only 20 per cent of the foreign blood was fatal. The symptoms are described.

Prominent among these is the destruction of the injected blood, hemolysis. There are also hemorrhages in the intestinal tract and in the wound. These are explained by injury to the vessel walls produced by the foreign blood.

Renal lesions are prominent. Agglutination is also mentioned.

The possibility of using *small* injections of lamb's blood as nutrient is discussed, but is considered inadvisable.

---

**Cancer:** L. Duncan Bulkley, in the *Medical Record* for May 15, considers the medical aspects of cancer. Analyzing the data obtained, we find that cancer has increased in proportion to the consumption of the three articles, meat, coffee and tea, and alcohol. Coming now to the important question of the prophylaxis and treatment of cancer to which this study of its medical aspects leads we find that we have advanced far toward a proper understanding of the same. We know that cancer is but a wrong development of certain previously normal body cells, possibly "embryonal rests," by a process or agamogenesis, dependent upon excessive and faulty nutrition. Laboratory and other studies have decided pretty certainly that it is *not* due to a parasite *nor* contagious, that it is *not* hereditary, *nor* due wholly to local irritant action, that it is *not* altogether a disease of old age, *nor* belonging to any particular occupation, and that it does *not* affect any particular sex, race or class of persons, and that it occurs all over the earth, but with striking differences in frequency according to certain peculiarities of life associated with advancing civilization. We have been thus forced by exclusion to recognize that it must be due to some systemic change, whereby the perverted nutrition offered to certain irritated cells causes them to take on a morbid action which is prolonged by a continued mal-nutrition and increased or aggravated by a vicious secretion from these diseased cells themselves; in other words, that it is a disease of faulty metabolism. The first element of treatment is an absolutely correct vegetarian diet, with avoidance of coffee and alcohol in every form. It would surprise you if you knew how almost invariably cancer patients are constipated, and have long been so. In fact, he has come to look upon this feature of imperfect intestinal exertion, or intestinal stasis as it is now called, as one of the prime elements in the causation of cancer. He feels almost like saying that the toxins produced by the millions of micro-organisms generated through intestinal stasis and fecal putrefaction are the real incidental cause of cancer. The kidney secretion is also found to be at fault in every case of cancer which he has studied, and is, of course, an indication of the faulty metabolism which prevails in these cases. The blood presents great changes in cancer, and this should be studied weekly, and iron or other remedies given as indicated.



## A CONTRIBUTION TO THE STUDY OF HERNIAS OF THE OVARY, OF THE FALLOPIAN TUBE, AND OF THE OVARY AND FALLOPIAN TUBE

By Aimé Paul Heineck, M. D., Chicago, Ill., Surgeon to the  
Jefferson Park Hospital, Rhodes Avenue Hospital, etc.

Hernia is a widespread disease. In the female, the frequency of external hernias has been and is still underestimated. All the hernias herein considered were external hernias, that is, their outermost overlying saccular covering was skin, and each, after reaching a certain stage of development, gave rise to a more or less visible, and palpable, external swelling in the ischiatic, obturator, ventral, femoral, inguinal or other region, depending upon the anatomical location of the hernia.

I wish to formulate some conclusions based upon quite an extensive study of the literature and also my clinical experience, concerning that type of external hernias in which the hernial sac content is either the Fallopian tube, the ovary or the Fallopian tube and ovary, alone or in association with some other abdominal viscus or viscera.

In investigating the subject, I soon became convinced that deductions and conclusions to be valuable should be based solely upon the study of cases in which the hernial contents had been demonstrated at the operating, dissecting or post mortem table.

The escape of the uterine appendages from their normal situation may take place through any of the weak spots or openings of the lower abdominal or abdomino-pelvic cavities. A hernia originating either in the internal or in the external inguinal fossa and escaping above Poupart's ligament, is an inguinal hernia; if it escapes beneath the same ligament, and emerges through the crural canal and the saphenous opening, it is a femoral hernia; if through the obturator canal, an obturator hernia; if along the course of the gluteal or sciatic nerves and vessels, emerging almost always above, very infrequently below the pyriformis muscle, very rarely through the lesser sacro-sciatic foramen, a gluteal hernia; if through an operative scar in the abdominal wall, a post-operative hernia.

Though sanctioned by long usage, the classifying of hernias into congenital and acquired is, at times, misleading.

Some hernias are congenital in the truest sense of the word; they are complete at birth, hernial contents being then present.

In most of the so-called congenital hernias, the sac only is existent at birth; in an acquired hernia, the sac is always of post-natal development, and in all but hernias "par glissement" is entirely derived from the parietal peritoneum. Congenital hernial sacs result from the want of closure of peritoneal processes, such as the processus vaginalis peritonei in the male, the canal of Nuck in the female, et cetera, normally present in the foetus. Congenital<sup>1</sup> hernias may appear at any period of life.

Orifices for the transmission of vessels and ducts are normally present in the muscular and aponeurotic layers of the abdominal walls. An acquired hernia is formed by the gradual or sudden escape through these orifices, pathologically widened, of viscera normally contained within the abdominal cavity; the viscera in their passage through and beyond the abdominal wall create paths of escape for themselves by bulging and pushing forward the parietal peritoneum.

### Conclusions

1. The Fallopian tube, the ovary,<sup>2</sup> or the tube and ovary,<sup>3</sup> in part or in their entirety, may be herniated. Degree may vary from a complete descent into a hernial sac, of the tube, ovary, or tube and ovary, to a condition where herniated viscus or viscera lie just without the abdominal ring.

2. The herniated tube, ovary, or tube and ovary may be the sole content of the hernial sac or there may be present as associated hernial contents one, two or more of the following structures or organs: Meckel's diverticulum, appendix vermiformis, omentum, urinary bladder, small or large intestine, rudimentary or fully developed uterus.<sup>3</sup>

3. Tubal, ovarian, and tubo-ovarian hernias are congenital or acquired, unilateral or bilateral; exist alone or in association with one or more other hernias of the same or of dissimilar anatomical types, of the same or of dissimilar clinical characteristics.

4. These hernias, in a small proportion of cases, coexist with malformations, underdevelopment or absence of other internal or of some external genitalia.

5. In individuals having a herniated tube, a herniated ovary, or a herniated tube and ovary, pathological states of other internal genitalia or of some external genitalia may be present: Vaginitis, ovarian cystoma, uterine fibroid, uterine prolapse and other uterine displacements, etc.



6. These hernias may coexist with pathological states of organs other than the internal or external genitalia: Chronic hydrocephalus, multiple stenosis of intestines, hydronephrosis, etc.; these coexisting pathological states not having any relation of cause or effect to the hernial infirmity.

7. Congenital or acquired hernias, of the tube, ovary, or tube and ovary, may develop at any period of life. These hernias have been observed in nulliparae, in primiparae, and in multiparae.<sup>8</sup> No age is exempt. No race is immune. As hernias by their complications shorten life duration, the number of hernia-bearing individuals that reach an advanced age is small as compared to that of the non-herniated.

8. According to their anatomical site, hernias of the uterine appendages are designated as post-operative, ventral, gluteal, sciatic or ischiadic, obturator, femoral and inguinal.

9. Clinically, these hernias are reducible, irreducible, non-inflamed, inflamed, strangulated or their pedicle may be the seat of torsion.

10. Torsion<sup>4</sup> of the pedicle of a herniated ovary or of a herniated tube and ovary, an accident peculiar to, and not infrequent in, hernias of the uterine appendages, gives the same clinical symptoms and determines the same anatomical changes as are observed in the strangulated hernias of the uterine appendages.

11. We are able to collect eight times as many hernias of the inguinal variety as of all the other anatomical varieties put together.

12. Tubal, ovarian and tubo-ovarian inguinal hernias are recent, old, or recurrent; are direct, interstitial or intra-parietal, indirect or oblique. If indirect or oblique, they are either complete or incomplete. A few sliding hernias are on record.

13. All the bilateral tubal, ovarian, or tubo-ovarian hernias recorded in medical literature of the last twenty years are of the inguinal variety. In bilateral hernias, both hernias may or may not show the same degree of development; they may have appeared simultaneously or one may have appeared a shorter or longer time before the other. They may show similar or dissimilar clinical characteristics. When bilateral, one hernia may be irreducible and the other reducible.

14. All the hernias in which the complication "torsion of the pedicle" occurred were irreducible congenital inguinal hernias.

15. All the femoral tubal, ovarian or tubo-ovarian hernias recorded in the medical literature of the last twenty years were of the acquired type and appeared in advanced adult life. "Femoral hernia is essentially a hernia of adult life."

16. Hernias of the uterine appendages, in the absence of anomalies of the non-herniated internal genitalia or of the external genitalia, do not if the herniated adnexa be of normal development, free from disease and reducible prevent conception, interfere with gestation, nor unfavorably influence parturition. Pregnancy can occur previous to, during, and subsequent to, the existence of hernias of this nature.

17. The etiology of hernias of the uterine appendages is that of hernia in general. As main factors should be cited:

1. *All conditions associated with increased mobility of the uterine appendages:*

a. Lengthening of the broad ligaments consecutive to repeated pregnancies.

b. Pathological relaxation of the ligaments due to puerperal subinvolution.

c. Abnormal length of the broad, ovarian, and infundibulo-pelvic ligaments.

2. *All conditions that tend to increase the intra-abdominal pressure:*

a. Sudden increase of the intra-abdominal pressure leads to hernia formation by overcoming the resistance offered by one or another of the weak points of the abdominal wall. Sudden increase of the intra-abdominal pressure may lead to the irruption of a tube, ovary, or tube and ovary in the sac of an old enterocele.

b. Occupations necessitating repeated muscular efforts associated with increased intra-abdominal tension, as the lifting or pushing of heavy weights, etc.

c. Physiological or pathological states which distend the abdominal cavity, which stretch the abdominal parietes, and widen the orifices normally present in the muscular and aponeurotic layers of the abdominal wall. Enteroptosis, obesity, abdominal tumors, ascites, pregnancy, etc., can be regarded as predisposing and exciting causes to hernia production.

3. *All conditions which weaken the abdominal wall: A hernia can occur wherever the parietal peritoneum is not sufficiently supported by the transversalis fascia and the other structures of the abdominal wall.*



a. Acute or chronic diseases debilitating the organism, especially such as cause great emaciation.

b. Obesity weakens the abdominal wall and increases the intra-abdominal pressure. The fat present in the abdominal wall, in the omental, mesenteric, and other peritoneal folds explains why obesity plays such a role in hernia development.

c. Traumatism. Most often the traumatism does not cause the hernia, but only reveals its existence. Among traumatisms must be mentioned abdominal operations and their sequelae. Pathologic adhesions of viscera or omentum to the anterior parietal peritoneal wall near a hernia opening may act as a predisposing cause.

d. Enteroceles, epiploceles, and entero-epiploceles.

e. Feeble development or atrophy of the aponeurosis of the transversalis muscle, and of the conjoined tendon. This factor is an important one in direct inguinal hernia.

18. The herniated organ or organs may be free from all degenerative changes.

19. The herniated organ or organs may be bound to the sac-wall or to each other; may be the seat of congestion, gangrene, hemorrhage, inflammation, suppuration, tuberculosis (primary or secondary), cystic and neoplastic disease (benign or malignant).

20. The herniated organ may be the seat of gestation.

21. The hernial sac and the herniated adnexa may be the seat of an inflammation, suppurative or other in character, which owing to progression by continuity of surface, has extended upward from the vagina, presenting the following anatomical picture: Vaginitis, endocervicitis, endometritis, salpingitis or pyosalpinx, ovaritis and saccular peritonitis.

22. The hernial sac and the herniated contents may be the seat of an inflammation, suppurative or other in character, which originating in the vagina or in the uterus has reached the tube and ovary by way of the parametrial and parasalpingeal connective tissue.

23. Pathological processes originating in the hernial contents may, owing to extension by contiguity of tissue, involve the sac and its overlying tissues.

24. Pathological processes, primarily involving the sac or the overlying tissues, can spread to the hernial contents.

25. The hernial sac and the herniated tube, ovary or tube and ovary can become the seat of an inflammatory or other

pathological process originating in the associated hernial contents, epiploitis, appendicitis, gangrenous gut, etc., infection spreading by contiguity of surfaces.

26. The herniated tube, ovary, or tube and ovary, and the associated hernial contents may be free of disease or the uterine adnexa may be normal and pathological changes be present in the associated hernial contents: appendicitis, gangrenous gut, epiploitis, etc.

27. The associated hernial contents may be normal and the herniated uterine adnexa be the seat of morbid changes.

28. It is at times difficult, at times impossible, to determine whether the anatomical changes present in the herniated organ or organs, developed previous to or subsequent to the displacement of the tube, ovary, or tube and ovary into the hernial sac.

29. Truss treatment for hernia of the uterine appendages is not curative, is often productive of discomfort, and not infrequently interferes with the nutrition and development of the herniated tube or ovary.

30. Women who suffer from any form of hernia should be carefully watched before, during and after their confinement so as to prevent or rather minimize any undue strain upon weak regions of the abdominal wall. These women, at the close of lactation or towards the end of the first year following their confinement, should, in the absence of contra-indications, be subjected to an operation for radical cure of the hernia.

31. After the second year of life, spontaneous cure of hernias of the uterine adnexa is rare and can occur only if the hernial contents are easily reduced and easily kept reduced.

32. In the female, all hernias irrespective of anatomical site, of clinical condition, or of nature of contents should, in the absence of a constitutional state contra-indicating operations of election, be subjected to an operation for radical cure.

33. We advise that all hernias of the uterine appendages<sup>s</sup>, whatever be the age of the patient, be, irrespective of anatomical site or size, subjected to an operation for radical cure:

- a. If the hernia be irreducible.
- b. If the hernia be strangulated.
- c. If the pedicle of the herniated organ or organs be the seat of torsion.<sup>o</sup>

After the age of two years:

- d. If the hernia be bilateral.



- e. If other hernias be co-existent.
- f. When hernia cannot be painlessly, completely, and permanently kept reduced.
- g. If organs other than the uterine appendages be also present in the same hernial sac.
- h. If the wearing of a hernial truss causes pain or aggravates the symptoms.
- i. If the patient has to be subjected to ether, chloroform or other general surgical anaesthesia for the performance of an operation of election, double advantage can be taken of this anaesthesia, and an operation for the radical cure of the hernia performed.
- j. If patient is exposed to pregnancy.

34. Clinical conditions so closely simulating hernia of the uterine appendages that a positive diagnosis without operation appears impossible, should be subjected to operative treatment. Only benefit can be derived from adherence to this rule. A diagnosis is established, and a cure is effected.

35. In hernias of the uterine appendages, as in all other hernias, the ideal time for operation is previous to the development of degenerative or other pathological states in the herniated organ or organs, and previous to the occurrence of any of the various complications incident to hernias. Early operations give the most satisfactory results.

36. The mortality of operations for the radical cure of hernias, if performed at an opportune time and by a rapid operator completely assisted, is practically nil.

37. To be effective, operations for radical cure of hernias must well fulfill two essentials: The suppression of the sac and the strengthening of the wall through which the hernia has escaped. In all herniotomies, the sac should be incised and the hernial contents examined. In the female, the inguinal rings are comparatively small. They can, without inconvenience to the patient, be closed.

38. Important operative points:

- a. Always wear and have the assistants wear rubber gloves.
- b. All ligatures and irremovable buried sutures should be of absorbable material.
- c. In inguinal hernias always divide the aponeurosis of the external oblique muscle to an extent sufficient to give a good

exposure of the inguinal canal, and of its contents. In the female, the inguinal canal in its normal state and after an inguinal hernia operation, in its restored state, should, outside of a few arterioles and nerve filaments, contain nothing but the round ligament, a structure much smaller than the spermatic cord. This round ligament comes from the muscular structure of the uterus; it finally becomes lost in the labium majus. In a hernia operation, the round ligament, if not the seat of disease, should never be sacrificed.

d. Always make a high and careful dissection of the hernial sac from the surrounding tissues, and especially from the round ligament to which it is often quite intimately adherent.

e. Always open the sac and determine by direct inspection and palpation the nature and state of the hernial contents.

f. After reduction or ablation of the hernial contents, the sac is to be transfixed and ligated as high as possible. Sac is then removed flush with the peritoneal cavity. This high and thorough removal of the sac is most important.

g. Never sacrifice the round ligament; it is harmful to the statics of the uterus. Never transplant the round ligament; it is unnecessary. No drainage. After operation, no truss should be worn; a truss does not support the scar; it weakens it.

39. The normal herniated tube or ovary should never be sacrificed. These organs have an important role and in the absence of marked structural impairment should be returned to the abdominal cavity.

40. These organs when herniated should be removed, if they be the seat of:

- a. Unavoidable or actual gangrene.
- b. Benign neoplastic disease.
- c. Malignant neoplastic disease.
- d. Voluminous cyst formation (unilocular or multilocular).
- e. Malformation or incomplete development (Hydrosalpinx).
- f. Suppurative inflammation.
- g. Hematoma or interstitial ovarian hemorrhage.
- h. Seat of tubal gestation, previous or subsequent to rupture of foetal sac.
- i. Tuberculosis, limited to or extending beyond the herniated organ.



j. Distortion beyond recognition.

k. Such pathological changes as prevent function.

41. Until we are better informed as to the frequency and nature of true and false hermaphroditism, removed herniated uterine adnexa not having a distinctive structure should be subjected to a microscopical examination. This will avoid mistaking testicular for ovarian tissue and vice versa.

42. In the treatment of strangulated sciatic or gluteal, obturator and femoral hernias of the uterine appendages in which the hernial sac also contains gangrenous gut, a double operation is almost always indicated: a laparotomy for the repair of the intestinal lesions, and a herniotomy for the radical cure of the hernia.

43. The herniated tube, ovary, or tube and ovary can be removed through the usual herniotomy incisions. The operative steps for the removal of these herniated organs correspond, short of a laparotomy, to the technique ordinarily used in salpingectomy, ovariectomy, and oöphorectomy.

1. Matthey (A. L.). Ueber sog. eingeklemmten Hernien der Adnexe. *Beitr. z. klin. Chir. Tübingen*, 1913, LXXXIII, 361-368.

2. Rendu (R.). Hernie étranglée de la trompe et de l'Ovaire gauches chez une fillette de deux mois et demi., *Lyon Méd.* 1913, CXXII, 25-27.

2. Petit de la Villeon—Deux cas de hernie de l'ovaire opérés chez l'enfant. *J. d. Med. de Bordeaux*, 1913.

3. Farrar (Lillian K. P.). Hernia of the uterus and both adnexa with report of a case (multipara, V-para). *Am. J. Obst., N. Y.*, 1913, LXVIII, 114-120.

4. Moschcowitz. Torsion of uterine adnexa in hernia of nurslings. *Am. J. Obst., N. Y.*, 1912, LXV, 539-542.

4. Moschowitz. A case of torsion of uterine adnexa in hernia in infants. *Am. J. Obst., N. Y.*, 1912, LXV, 537.

5. Pakowski and Ségard. Hernia de la trompe et de l'ovaire. *Bull. mém. Sec. anat. de Par.*, 1911, LXXXVI, 615-618.

6. Nové-Josserand (G.) and Rendu. Sur quatre cas de hernie congénitale de la trompe et de l'ovaire chez la petite fille. *Arch. Prov. de Chir. Par.*, 1913, XXII, 543-546.

## CLINICAL EXPERIENCE WITH CAPSICUM, POTASSIUM BI-TARTARATE AND TEREBENE

By H. F. BIGGAR, M. D., Cleveland

Capsicum as a heart stimulant has, in my practice, proved a very valuable remedy in alcoholism and for habitués of opium and its derivatives. I first learned of its value during my service for eleven years as physician to the Cleveland Workhouse. Capsicum was the only remedy given to the prisoners who unfortunately were suffering from mania a potu or from the excessive use of opiates. Even when apparently moribund at the time of entering, capsicum always proved beneficial. There were no deaths from such causes. It was given in beef broths and other soups and in coffee, tea or milk, made as strong as the patient could swallow the liquid without suffering too much discomfort, and given freely every two or three hours until improvement followed, then less frequently. Several years ago I was called in consultation with the late Doctor H. W. Curtiss, of Chagrin Falls. The patient, the wife of a well-to-do farmer, had symptoms of a very severe type, quite similar to those of patients having cholera morbus or sporadic cholera. Her condition was very critical, vomiting and purging, the rice water discharges, blueness of the skin, glassy and fixed eyes and the cold sweat—a precursor of approaching death. The usual cholera remedies as arsenicum, camphor and veratrum, and others, had failed. Capsicum in appreciable doses was given and the patient recovered. In a very interesting case an habitué of morphin, a society woman, had been accustomed for years to take hypodermic injections every three hours, a full syringe of Magendic Solution. Magendic Solution is composed of sixteen grains of morphin to an ounce of water. Capsicum bridged over the tremendous struggle, and alleviated the tortures that always accompany efforts to be freed from the torments of this fascinating and alluring drug, well described by De Quincey in "The Confessions of an Opium Eater." Her face, from the drug, became blotchy and pinched, her complexion yellow; but in time, after being cured, the complexion became normal and her health was restored.

My experience with potassium bi-tartarate (cream of tartar) has been very satisfactory where the volume of urine has been lower than normal. With a patient, where the volume for twenty-four hours was less than eight ounces, after taking the preparation for four days, the volume increased to forty ounces. Many



patients have enjoyed this drink during their convalescence. It is healthful and a good substitute for lemonade or phosphates. The may be sweetened if so desired.

For Chronic bronchitis a good remedy is Terebene, even when the expectoration is purulent. The dose is two or three grains or minims of the pure liquid in capsules, three times a day or less frequently. I have found it more beneficial than rumex crispus or balsam of peru when these were indicated. I am a friend to terbene for bronchial catarrhs.

---

**Wounds and Hydrogen Peroxide.**—"An unusually large number of wounds infected with gas-forming micro-organisms has been observed in the present war. In the treatment of these injuries, ordinarily involving deep-seated lacerations, the use of solutions of hydrogen peroxide is reported to be decidedly beneficial. Despite these positive assurances, it is not easy to defend any tenable theory of the action of the peroxide. Of course, one thinks first of all of the oxygen which is readily liberated from the peroxide in wounds. Oxygen, especially in a nascent form," says *The Journal of the American Medical Association*, "may have a pronounced chemical effect and bring about oxidation in suitable material. It has been assumed that inasmuch as the gas-forming bacilli are anaerobic in their habits, an atmosphere containing liberated oxygen might inhibit their development in wounds and in the depths of injured tissues. But the persistence of oxygen for any length of time in the midst of tissue clefts is highly problematic; and to this may be added the fact that even many anaerobic organisms are not destroyed or even completely inhibited in the presence of a considerable percentage of oxygen. The bacillus of malignant edema and the organism of tetanus continue to grow in the presence of atmospheres containing small percentages of oxygen. So far as the chemical action of the peroxide, as such is possibly concerned, it must be recalled that the tissues are rich in the enzyme catalase, which promptly tends to liberate the oxygen and thus change the composition of the original product to an inert residue.

"Spiro, of Strassburg, who has studied the recent treatment of the wounded in one of the base hospitals, ventures a physical, rather than chemical, explanation of the beneficent action of hydrogen peroxide. Recalling the familiar frothing of the substance when brought into contact with animal tissues, he suggests that the minute bubbles of gas formed serve to expose and open the spaces and pores of the tissues attacked. Larger surfaces are thereby exposed. The disinfectant power of the peroxide solution as such is doubtless small, but the effervescence has a pronounced cleansing action on the wounds, forcing out organisms and particles of destroyed tissues to the surface. The decomposition of the tissues is in this way retarded and the bacteria are brought into locations where the exposure to the air helps to destroy them in the natural way or through the subsequent use of surface antiseptics."

**The So-called New Antiseptic**—"Recently the newspapers have contained announcements of a new antiseptic or germicide that has proved, or is to prove, of grave value in the treatment of the wounded in the present war. Credit for its discovery is given to Drs. Carrel and Dakin.

"The antiseptic referred to is that which Dr. Dakin of the Herter Laboratory, New York—now serving as bacteriologist in a war hospital at Compiègne in France—announced in a paper read before the Académie des Sciences in Paris. It is made by the well-known process of adding sodium carbonate to a solution of chlorinated lime. The mixture is thoroughly shaken, and after half an hour the liquid is siphoned off from the precipitate of calcium carbonate and filtered through cotton. To this clear liquid sufficient boric acid is added to make the preparation neutral or acid, the amount required being determined by titration with phenolphthalein. Such a solution was found to kill staphylococci in two hours.

"According to the *British Medical Journal*, about a year ago Professor Cohen, of the University of Leeds, England, entered into communication with Dr. Dakin, a former student, regarding research on antiseptics for surgical use. The arrangement was that the substances elaborated by Professor Cohen should be tested bacteriologically by Dr. Dakin, and that the most promising should be tried clinically by Dr. Carrel.

"At about the same time, under the auspices of an English medical research committee, a similar research by Prof. Lorrain Smith, with the assistance of Professor Drennan of the University of Otago, N. Z., Dr. Rettie, a chemical expert, and Lieutenant W. Campbell of the British army medical corps, was undertaken in the University of Edinburgh. Their results were reported in the *British Medical Journal*. The substance which they prepared was made by rubbing up chlorinated lime to a fine powder and mixing it with an equal weight of powdered boric acid. The ideal antiseptic for the field, they concluded, was a dry powder to be applied direct, which, it was believed, has advantage over a solution because more portable, and water is often not procurable.

"Chlorinated lime, the basis of the so-called new antiseptic preparation, is well known as a powerful disinfectant. Its alkalinity, however, make it destructive to living tissues except in dilute solution. The same may be said of solution of chlorinated potash (Javelle water), which has been largely used by French surgeons in the present war, and of solution of chlorinated soda (Labarraque's solution). The advantage claimed for the new mixture is that the preparation, being practically neutral and unirritating to the tissues, may be applied in greater strength than that in which it is possible to use chlorinated lime, Javelle water or Labarraque's solution. Experiments indicate also that the germicidal activity of chlorinated lime is increased by such treatment of the calcium hypochlorite as has been described. Such increase in germicidal activity is generally attributed to the liberation of hypochlorous acid. It has been found that the activity of ordinary bleaching powder is greatly increased by passing through it carbonic acid gas. Any other acid, as boric acid, will do as well. From the chemical point of view, therefore, there is nothing new in this method. That the practical application of such a mixture is not wholly new is proved by an earlier article published by Vincent. He suggested the application to ulcerating and gangrenous wounds of a mixture consisting of fresh chlorinated lime and powdered boric acid."—*The Journal of the American Medical Association*.



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902.

Capital Stock, \$6,000

---

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH F. STONE  
2318 PROSPECT AVENUE

## ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.  
ROGER G. PERKINS, M. D.

JOHN PHILLIPS, M. B.  
T. WINGATE TODD, F. R. C. S.

## COLLABORATORS

C. E. FORD, M. D.  
H. E. HANDERSON, M. D.  
S. W. KELLY, M. D.  
J. J. R. MACLEOD, M. D.

DAVID MARINE, M. D.  
V. C. ROWLAND, M. D.  
H. L. SANFORD, M. D.  
TORALD SOLLMANN, M. D.

G. N. STEWART, M. D.

## EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.  
*Vice-President*, C. E. BRIGGS, M. D.

*Secretary*, C. A. HAMANN, M. D.  
*Treasurer*, H. G. SHERMAN, M. D.

## BOARD OF DIRECTORS

C. E. BRIGGS, M. D.  
F. E. BUNTS, M. D.  
G. W. CRILE, M. D.

C. A. HAMANN, M. D.  
C. F. HOOVER, M. D.  
S. H. LARGE, M. D.  
J. B. MCGEE, M. D.

J. P. SAWYER, M. D.  
H. G. SHERMAN, M. D.  
W. H. WEIR, M. D.

---

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

---

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

---

## EDITORIAL

### THE CULT OF THE MUMMY

A few weeks ago it was my privilege to spend some time with my good friend and generous host, Doctor W. C. Mills, in his camp near Circleville, where he was employed in the excavation of a mound for the State Archeological Society. According to Doctor Mills, it was a barren mound, and so it may have been, comparatively speaking, to a man of Doctor Mills' knowl-

edge and experience. But it was my earliest opportunity to catch a glimpse at first-hand of those interesting people of which we know so little. And in the tent under the mulberry tree, amid the stillness of the summer night, items of the day's search flashed before my mind, each with its little problem, almost as numerous as the tiny lamps of the myriad fire-flies, and like them vanished to be succeeded by yet others more numerous than before.

One skeleton, and one only, among the number was pigmented with red ochre, the color of which had stained the earth for a foot around the bones. Why was this individual alone singled out for such treatment? Had he died far from home and his body been smeared with red ochre and grease and brought back by friends for burial? Red is the color of the sun, typifying life, as the Omaha will tell you. The spirit did not bid farewell to the body for several days after death, and so the Dakota, the Teton and other tribes would not bury the body immediately, but laid it on a scaffold or on the branch of a tree that the spirit might gaze abroad upon the surrounding country.

Rain and ground-hogs will do much to disarrange human bones, but why were some of the bones of certain skeletons displaced so that it seemed impossible for them accidentally to have assumed their permanent position? Were the bodies indeed interred at once after death or did something happen to them before the final burial?

One man's skeleton was complete except for the mandible. The body lay extended on its back with a small stone at each side of the nape of the neck, and the roots of an adjoining tree had made a lattice-work through the orbits and the skull. The body was carefully buried, but where was the jaw? No vestige of it or of the mandibular teeth could be found after the most protracted search, although we discovered the upper set intact. No mark upon the skull or upper teeth suggested a sudden violent severing of the lower jaw. Yet the teeth, at any rate, would not wholly resolve into the elements, the upper ones remaining so complete.

These and other queries filled my mind, and I began to think of the origin of mound builders and the customs which they shared with other peoples far across the seas; not so much whence the tribes came, but why they had these customs and



from where they got them, the ever-present question which flits like an elusive fire-fly before the mind of so many present-day ethnologists.

In Wales we find the habit of burying red ochre with the body in the case of the Red Lady of Paviland, a skeleton which eventually proved to be that of a man of the Aurignacian age. In Egypt, too, the procedure of painting the body with a mixture containing red ochre was adopted in the XXIst Dynasty, in other words, about 1,000 B. C.

The thought, as I have previously indicated, brought others in its train. The suggestion of exposure of the dead body on a platform recalled the fact that a similar practice obtains in Australia, among the Naga tribes in India and in other places. Obviously this is always some modification of a bed or bier.

Although it has no direct connection with the foregoing, the ceremony of amputation of a finger at the death of a relative or great person obtruded itself upon my consciousness. Why is this custom common to the Bushmen of South Africa, the Pigmies of Lake Ngami, the tribes of northwest Canada, the Dakotas, to the Polynesians and to the Dravidians of Mysore? Mariner, indeed, tells us of two little Tongans, only five years old, who were fighting tooth and nail for the honor of suffering for the lord of their land.

The distortion of position among the bones of some of the skeletons suggested that the bodies were not immediately buried. What happened in the meantime? We know that the tribes in Florida, Virginia, the Carolinas and other parts of America did temporarily preserve their dead by various methods of desiccation, mummification in short. And as the word comes to the lips one thinks instinctively of the widespread custom of preservation, it may be temporarily only, of the dead. Whence did it take its origin? Did it start independently in different parts of the world, as one often hears suggested, through "the similarity of the working of the human brain," that notoriously irresponsible organ! Through the kindness of Mr. Cathcart I have the opportunity of examining all the valuable anthropological material in the Museum of the Western Reserve Historical Society, and I hope later to compare the American and Egyptian mummies housed therein so that visitors may understand the relation that exists between these similar practices carried on so far apart.

The loss of the mandible already mentioned reminded me of

the upper jaw shown to me by Doctor Mills some months ago. The specimen consisted of the palatal and alveolar processes of the two superior maxillae with the contained teeth, but curiously enough, the upper surface which constitutes the floor of the nose and the maxillary sinuses was smoothed off and rounded so that Doctor Mills suggested laughingly to me that it might have been some brave's false teeth! Is it possible that this was indeed the palate of some tribal orator, some "Many Tongues" or "Loud Talker," taken and used by his successor to charm him also into flowing speech and convincing argument. Among the Baganda the mandible of a chief is removed, cleaned and buried separately from the body and has erected over it a large conical thatched temple. In other countries also the mouth parts receive special treatment, but it may be the tongue and not the jaw which is most revered.

Is then the whole world girdled with interwoven customs, or are these similarities merely accidental parallelisms of the human mind, similar to those physical parallelisms, as Professor Giuffrida-Ruggeri, of Naples, terms the similarities between the several varieties of the collective species of man now existing upon the earth? Almost invariably one meets with disappointment on reading the conclusions of ethnologists. Finishing Peet's little book of Megalithic monuments, in which, if anywhere, it might be hoped that the author would reach some definite suggestion of the transportation of custom, one meets with the hopeless statement: "It is true that the use of metal was spread by means of commerce, but here there was something to be gained by adopting the new discovery, and there was no sacrifice of religious custom or principle. An exchange of products between one country and another is not unnatural, but a traffic in burial customs is unthinkable." Why, on earth why? It makes one wonder if Mr. Peet has ever read his Old Testament. Among the Hebrews there was altogether too much traffic in religious principles for such strict minds as those of Moses, Isaiah, Ezekiel. The inability to think must be in the stony mind of the ethnologist. It reminds me of the written statement of one American ethnologist to whom I appealed for assistance in obtaining facilities to anthropological literature for the Anatomical Department. His reply was to the effect that it would be better if we would confine ourselves to our own subject. That anatomy is the study of living races was "unthinkable" to him. Such obtuseness and quite unnecessary violence of lan-



guage seem to be the inheritance of the "orthodox" ethnologist, and we cannot wonder that he flounders in darkness while the whole world is bright with romance.

It was in this mood that I returned to find newly arrived on my desk a monograph of breathless interest on the significance of the geographical distribution of the practice of mummification,\* written on pages ablaze with imagination, yet not transgressing in any sentence the bounds of scientific investigation, written by Professor Elliot Smith, a man of captivating personality and power of expression, whose profound knowledge of Anthropology enables him to stride along a new trail in the study of the wanderings of peoples and customs, which others may follow with confidence and security. Years of patient investigation of the habits and manners of the Ancient Egyptians and the people dwelling along the Mediterranean littoral have resulted in Doctor Elliot Smith's becoming the foremost world-authority on the influence of Egypt on the civilization of the world. In a manner so fascinating that one who takes up the monograph must perforce read it to the end before he lays it down, the veil is lifted not only from the manner in which so many of the aboriginal customs of America were formed, but also from the very routes by which these customs travelled. The story is told with such vivid simplicity and such convincing definition that it requires no previous anthropological experience, no special knowledge, to follow the train of argument and to observe the migration of customs eastward by way of the Arabian coast to India, the Malay Archipelago and across the Pacific islands until it reaches our western shore. It makes one wish that some time we in Cleveland might hear from the author's own lips the story of how Egypt lighted the torch the fire from which spread east and west at last to encircle the world. There are those who will calmly assert that the rise of custom occurred independently through "the similarity of the working of the human mind." Doctor Elliot Smith reminds us of McDougall's positive statement that the distinctive feature of human instincts is that they are of "the most highly general type." "They merely provide a basis for vaguely directed activities in response to vaguely discriminated impressions from large classes of objects."

---

\*On the significance of the geographical distribution of mummification—a study of the migrations of peoples and the spread of certain customs and beliefs. By G. Elliot Smith, *Mem. and Proc. Manc. Lit. Phil. Soc.*, Vol. 59, Part III.

If we take a single custom alone, of course it may not carry us far. It is only by reviewing *all* the customs of peoples and tracing their migration out upon a map that we can demonstrate the certainty of interdependence.

Doctor Elliot Smith will forgive me for extracting mere fragments of a story which should be read only in its entirety. "But suppose, for the sake of argument, we shut our ears to the voice of common sense, and allow ourselves to be hypnotized into the belief that some complex and highly specialized instinct . . . impelled groups of men scattered as far apart as Ireland, India and Peru, independently the one of the other, to build mausolea of the same type, to acquire similar beliefs regarding the petrification of human beings, and many other extraordinary things connected with such monuments, how is this 'psychological explanation' going to help us to explain why the wives of the builders of these monuments, whether in Africa, Asia or America, should have their chins pricked and rubbed with charcoal, or why they should circumcise their boys, or why they should have a tradition of the deluge? Does any theory of evolution help in explaining these associations? They are clearly fortuitous associations of customs and beliefs, which have no inherent relationship one to the other. They became connected purely by chance in one definite locality, and the fact that such incongruous customs reappear in association in distant parts of the globe is proof of the most positive kind that the wanderings of people must have brought this peculiar combination of freakish practices from the centre where chance linked them together." . . . "Such evidence is infinitely stronger and more convincing than that afforded by one custom considered by itself, because in the former case we are dealing with an association which is definitely and obviously due to pure chance, such as the so-called psychological method, however casuistical, is impotent to explain."

There "arose in Egypt somewhere about 3,000 B. C. the nucleus of the *heliolithic* culture-complex—mummification, megalithic architecture, and the making of idols, three practices most intimately and genetically linked one with the other. But it was the merest accident that the people amongst whom these customs developed should also have been weavers of linen, workers in copper, worshippers of the sun and serpent, and practitioners of massage and circumcision."



"But it was not for another fifteen centuries that the characteristic *heliolithic* culture-complex was completed by the addition of numerous other trivial customs, like ear-piercing, tattooing and the use of the swastika, none of which originated in Egypt, but happened to have become 'tacked on' to that distinctive culture before its great world tour began."

Of course, every feature of this culture-complex is not found among all peoples in whose life the heliolithic culture came to play a part. Noteworthy is the fact that it was frequently, as Rivers has shown, the more useful arts which became forgotten and eliminated. But this does not make the argument one whit less convincing. It is merely a refutation by facts of the astonishing position taken up by many ethnologists, as in the case of Peet to which I referred above. But I must not prolong this discussion. As already mentioned, the monograph is far too important to have its substance cut up, nor indeed is that possible if the logical argument and convincing nature of the work is not to be tampered with. It is true that American aboriginal customs are barely touched. Doctor Elliot Smith carries us as it were around the world to take farewell of us on our own doorstep, but he promises to return and in a later and more comprehensive brochure to explain to us the origin and meaning of the practices at our own gates. And this should be to us vastly the more interesting and delightful portion of the work. It is moreover, no small satisfaction to know that the first irrefutable, connected and consecutive proof of the interrelation of customs should have been produced by a medical man, in the light shed by the practice of mummification, an art closely associated in earlier times with medicine itself. T. W. T.

---

### TRAINED NURSING SERVICE BY THE HOUR

We have been greatly interested in the recent announcement by the Visiting Nurse Association of its new nursing service to the Cleveland public.

The Association has decided to extend its services to those persons able to pay for skilled nursing care, and yet not able or desirous of having a nurse resident in the home.

There are many times when the patient's physical condition does not require more than one or two hours' trained care, some member of the family being able to minister to the patient during the remainder of the twenty-four. In view of this fact, the

Cleveland Visiting Nurse Association is anxious to extend trained nursing service on the visit and hourly plan to all those needing only this limited service.

Charges for this service are most reasonable, making the service within the reach of all those needing it.

At a special rate, also, preparations for and services during minor operations and confinements, may be arranged for—with any subsequent visits required, at the regular rate, and with a provision for night service when needed.

Visits must be arranged for during the day, through the main office of the Visiting Nurse Association, by the attending physician, member of the family, or neighbor.

The Association is earnestly seeking the co-operation of physicians and of the people in making this new service effective, and have invited both suggestions and criticism to that end.

The Visiting Nurse Association is a growing institution, and it is possible we accept its splendid service daily, without sufficient recognition of its tremendous value to our rapidly growing community.

Trained Nursing Service on the hourly or visit basis fills a long-felt want. Let us assist in developing to the utmost success this new service of the Visiting Nurse Association for the benefit of Cleveland.

R. F. S.

---

**Flies and Diarrheal Disease**—Publication No. 91, New York Association for Improving the Condition of the Poor. The Bureau of Public Health and Hygiene of the New York Association for Improving the Condition of the Poor has issued a special publication entitled "Flies and Diarrheal Disease," descriptive of its three months' study in the homes of over a thousand infants in New York City, on the relation of flies and diarrheal disease. Special attention has been given such influencing factors as dirt and artificial feeding, and their relative importance determined. A full description of the study with its important conclusions may be obtained by request from Philip S. Platt, Superintendent of the Bureau, 105 East 22d St., New York, N. Y.



## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. McGEE, M. D., Cleveland

**Sparteine:** Samuel E. Earp, in *Nevada Medicine*, writes concerning sparteine sulphate, basing his report upon its use in 305 cases. Sparteine as is well known, is obtained from the tops of *cytiscus scoparius*, and its sulphate is official, and is the form generally employed. There seems to be some diversity of opinion as to its action. Dr. Earp is prone to believe that it is possible that some products are unstable, and he is not now sure that any preparation of sparteine will remain reliable for an indefinite length of time. Furthermore, the dose given has often been too small. One or two grains gives the best results. Some very good men, who have not obtained favorable results, seem to be honest in their conviction and it is far from his intention to question an honesty of purpose, yet it may be fairly possible that there may have been an absence of thoroughness. He has used sparteine for a number of years and within the past two years has kept a record of each case. The patients were treated in hospitals, as well as in private practice, and in nearly all, favorable results were noted. Case 1, L. H., age 76, was an alcoholic and gave a history of rheumatism. There was a chronic myocarditis, some dilation, and a mitral murmur. He had had several attacks of angina pectoris. The pulse was irregular, and a record could not be obtained. One grain of sparteine sulphate was given each four hours. Improvement on the second day. On the fourth day, pulse 80 and regular, no dyspnea. On the eighteenth day, the improvement was so marked that the patient walked around the ward, but the mitral gave a faint, blowing sound. Sparteine was used for two months, in doses of one grain three times a day. He is now performing full duty as a cook at a large hotel and needs no medicine when he lets alcohol alone. Another case which seemed to him almost phenomenal was one of the cardiorenal variety, with edema from feet to hips and patient helpless. The medication consisted of strychnin, sparteine and salines. Sparteine was given in two grain doses each three hours and in seventy hours there was no edema, and the heart was calm, but a mitral murmur could be heard during locomotion. Similar results were obtained in nearly all his cases and in various diseases, including arthritis, pneumonia, diseases of the cardiovascular system, etc., associated with cardiac weakness. In a large number of cases of morphinism, in which the patients had been taking daily from three to fifteen grains of morphin, the operation of the federal anti-narcotic law caused the habitués to seek treatment at the city hospital. Many showed heart irregularities. A weak, irregular heart was often found, and exhaustion was especially pronounced in old women. The worst cases, ten in number, were placed upon one grain of sparteine every six hours and all responded to its use. All medicine was given hypodermatically and results were good in all except one case, although in this compensation is good. He believes that sparteine seems capable of acting as a heart tonic without causing any untoward effects such as are witnessed in the use of some other agents and he has recognized more force and less frequency after sparteine has been employed. He thinks that however given, it is evident that its physiological action is obtained by the larger doses such as one to two and one-half grains. The small doses are worthless.

Petty has shown that sparteine not only does not depress the heart muscles of a human being, but on the contrary it acts as a positive and powerful tonic to it. While digitalis is frequently compared with sparteine, it has an avenue of usefulness in part, a departure from that of sparteine, and it is not germane to speak of one as a substitute for the other, nor is it necessary to favor one to the exclusion of the other. With our present knowledge of theraphy we cannot argue in favor of sparteine as against digitalis with a view that digitalis always raises the blood pressure. Janeway states that the dangerous increase of blood pressure from digitalis as used in human beings is a superstition without

any basis of clinical fact—while sparteine exerts equally as tonic, an effect on the heart muscle as digitalis, its influences on the arterial system, especially on the arterial capillaries is directly the reverse, digitalis being a vaso constrictor, and sparteine a vasodilator. By dilating the arterial capillaries, it reduces the resistance against which the heart is called upon to propel the blood. It may be thus seen why it prevents myocardial and general exhaustion, favors heart nutrition, and the increase of hearttone. It has the advantage of acting quickly and is practically non-toxic. Dr. Earp's very thorough investigation, and satisfactory report as to the merits of sparteine would seem to warrant further use of this valuable remedy.

**Digitalis:** In the June number of the *Therapeutic Gazette*, Horatio C. Wood, Jr., presents the newer ideas concerning digitalis. The studies of the action of digitalis which have been made within the last five years, have led to changes in our conception of its effects almost as revolutionary as those caused by the investigations of Traube and Brunton fifty years ago. There is no drug, a knowledge of whose physiological action is more important for its clinical employment than digitalis. There is, however, one error of technique common to nearly all of the pharmacological investigations until recently, and that is the size of the dose which was employed. Pharmacologists have not yet fully recognized the importance of distinguishing between toxic and physiologic effects. Whole masses of our ideas concerning the therapeutic action of drugs are based upon experiments made with doses far in excess of those which could ever be employed in practical medicine. Recently a number of observers have reported with seeming surprise that in human beings, digitalis does not increase arterial tension. But this conclusion is after all not contradictory to the results of animal investigation, for it is apparent that neither in the dumb animal nor in man is digitalis in therapeutic dose, likely to produce any distinct increase in the blood pressure. From the studies of Jounescu and Loewi, as well as of Joseph, it is highly probable that the diuretic action of the digitalis group is due to a relative dilatation of the blood-vessels in the kidney. It is therefore not improbable that the occurrence of diuresis is indicative of a change in the caliber of the vessels. The action of small doses of digitalis upon the normal circulation may be summed up briefly as a stimulation of the cardio-inhibitory mechanism with probably a slight increase of vasomotor tone, but not sufficient to cause any rise in the blood pressure. The increased vigor of contraction and muscle tone due to a direct action upon the heart muscle, while perhaps, manifestations of the action of therapeutic doses, are later phenomena than the retardation of the pulse-rate. The effects of digitalis in disease are often very different from those produced in health. Among the first of the morbid factors which modify the reaction to this drug may be mentioned fever. It has long been known that the action of digitalis is much less marked when the body temperature is elevated, and Brenton and Cash found when digitalis was given in full dose during the period of pyrexia, although there was no change in the pulse-rate, if for any reason the temperature of the animal fell rapidly an extreme degree of slowing occurred. This is in entire harmony with clinical experience. Many of our most cherished theories concerning heart disease have been completely exploded by the pioneer revelations of Mackenzie and of Cushing as to the causes of rupture of compensation. As is well known, this group of cardiologists have shown that in many cases of severe heart failure the auricle ceases to contract coordinately, passing into a condition known as fibrillation, in which each muscle fibre contracts without any relation to its fellows. Mackenzie differentiates sharply between the action of digitalis in those cases in which the auricle is fibrillating and those in which it is beating coordinately. The most marked effects are seen in the first group, but Mackenzie has never been guilty of the absurdity of some of his ultra-enthusiastic followers, who claim that digitalis is a specific in all cases of auricular fibrillation, but useless in all other forms of chronic heart



disease, and that the fact that digitalis exercises a beneficial influence is of itself evidence that the case is one of auricular fibrillation. He definitely states that certain cases of this disorder are not apparently benefited by digitalis, nor any of its congeners, and in a considerable proportion of his cases of valvular lesions, with normal rhythm, decided improvement followed the exhibition of the drug. In cases of auricular fibrillation digitalis shows in full degree its action upon the pneumogastric nerve. It is important to note that the lowest pulse-rate after digitalis is not essentially different in normal or fibrillating hearts, and this after all is the real measure of the degree of inhibition. It is very commonly taught that the slowing of the pulse in cases of auricular fibrillation is due to a lessening of conductivity across the auriculo-ventricular bundle through a direct action upon the cardiac muscle, but Cushing rejects this explanation on the ground that there is no proof that digitalis diminishes the conducting power of the bundle of His, save through its action upon the inhibitory nerve. He is inclined to attribute the slowing of the beat in these cases to a diminution of ventricular irritation, the result of better nutrition. He believes a word of protest should be entered against the tendency to give digitalis in large doses until marked evidence of toxic effects are produced, such as nausea or arrhythmia. He has always believed that with digitalis as with any other potent drug, one should give enough to accomplish the desired result, but is convinced that there are many cases which might be benefited by small doses in which these enormous doses may prove actually harmful.

---

**Gastric-Ulcer:** *The Medical Record* of June 12, considers editorially the gastric and duodenal ulcer in infancy and childhood. As it is in comparatively recent years that the frequency and importance of gastric and especially of duodenal ulcers in the adult have been appreciated, it is hardly to be wondered at that these lesions in children have received scant consideration, particularly since they are comparatively rare in early life. Lockwood's studies show round ulcers of the stomach and duodenum to be relatively rare in children, but he believes it more common than most surgeons realize, and he also believes that many obscure abdominal symptoms which have been ascribed to appendicitis, gastroenteritis, etc., are due to ulcers. Ulcers in children are relatively less frequent in the pyloric region, occurring most often on the posterior wall, near the cardia, and along the greater curvature. Regarding diagnosis, Lockwood says, "Pain in the epigastrium, hemateinosis, and bloody stools are conclusive signs. The two latter are usually absent, and pain is often indefinite and not well localized." Pain, worse at night, loss of weight and chronic indigestion are usually present. These symptoms should suggest ulcer; and physical examination, aided by microscopic examination of the stomach contents and stools for concealed blood, will render the diagnosis conclusive. Appendicitis seems to be the condition most often confounded with gastric ulcer. Holt collected from the literature, 91 cases of ulcer of the duodenum, in the first year of life, and reported four cases from a total of 1800 autopsies at the Babies' Hospital in New York. Veeder brings the number of reported cases up to 100 by adding five seen during a period of two years at the St. Louis Children's Hospital. In four of these, a clinical diagnosis was made. Confirmed later in these instances by autopsy while the fourth infant recovered. The fifth case was found at autopsy, the lesion having been unsuspected during life. Veeder points out that severe collapse has occurred in many cases with and as a result of hemorrhage, and in some cases has apparently been the cause of death, and that the absence of subjective symptoms which are of so much value in the diagnosis of duodenal ulcer in the adult, make the diagnosis dependent on the association of a few objective symptoms. The presence of gross hemorrhage is the only definite symptom pointing to a duodenal ulcer, and hence when this symptom is absent, the diagnosis cannot be made. "Whether or not a diagnosis can be made by the use of occult-blood tests, when no gross

evidences of hemorrhage have been observed is a question to be determined. That such tests should be made in all cases where vomiting is associated with atrophy in young infants, is indicated, as it is only in this way that the value of such tests for the early diagnosis of duodenal ulcer can be determined. Very little can be done in the way of treatment of a condition about which so little is known. In Veeder's opinion about the only indication is to place the infant under the best nutritional conditions which means breast milk, and it is to this alone that he attributes the improvement in one of his cases. Operation was not deemed advisable in any of his cases owing to the severe general nutritional disorder of the infants at the time the diagnosis was made. Yet the mortality was 80 per cent, and he admits that if methods are found by which an ulcer can be recognized early, surgical treatment offers at least theoretical possibility.

**Secretin:** J. Wallace Beveridge in the *New York Medical Journal* for June 26, writes concerning secretin and its therapeutic possibilities. During the past decade a tremendous advance has been made in medicine along the lines of a better understanding of the ductless glands and their internal secretions. The discovery of secretin may almost be termed accidental, because the phenomenon first observed by Dolinski and Gottlieb, that when dilute hydrochloric acid was introduced into the intestinal tract, a perceptible increase in the secretion of the pancreatic gland was noticed. Then Popielski, Wertheimer, and Lepage established the fact that the hypersecretion of the pancreas occurred only when an excess of an acid medium came in contact with the duodenal mucosae. Pavlow advanced his theory that the activation of the pancreas was not an acid, but some unknown substance acting either through the circulation or by reflexly stimulating the nerve centres, so producing an increase in the flow of pancreatic juice. Bayliss and Starling later proved that this assertion was correct, showing the presence of an excitant—a hormone which we now call secretin. There has been considerable question as to the potency of secretin when given orally. Some assert that no real physiological action results from its oral administration, but Beveridge asserts positively that it may be given orally in certain conditions without disappointment, and with more advantage than any other therapeutic agent at our command. Secretin exerts a distinct physiological action upon the pancreas, augmenting its secretions. Delezenne and Fronin have shown that secretin is capable of exerting a physiological action which without doubt increases the supply of succus entericus. It remained for Hallion to show that secretin was capable of increasing the peristalsis of the small and large intestines. In diabetes, from a theoretical standpoint, an exhibition of secretin should aid in overcoming the incomplete breaking down of the protein, and carbohydrate molecule. Clinically, however, this is not a fact, and in these cases wherein he has given secretin from three to seven months, in no instance has he observed any change in the sugar output of the urine. But there has been unquestionably a distinct action upon protein. In another series of more than 100 cases of thyroidism complicated by chronic constipation, intestinal stasis was one of the predominating symptoms. In the medical treatment of stasis, the mineral oils have been of great aid, acting only in a mechanical way, exerting no physiological action whatever. In cases of impaired metabolism, something more is needed than a mere mechanical agent, and secretin offers a satisfactory solution of the problem. It not only increases peristalsis, but also aids in the normal digestion of protein. He summarizes: 1—Secretin is indicated in all pancreatic insufficiencies where true organic changes have not occurred. 2—It may be employed to advantage in aiding protein digestion. 3—It is the most important factor in raising a low urea output to normal. 4—It has no power to aid in the digestion or breaking down of the carbohydrate molecule. 5—It is indicated in gastro enterostomy and jejunostomy. 6—It is of distinct value in nephritis of intestinal origin. 7—It increases peristalsis and is indicated in all cases of stasis.



## NEW AND NONOFFICIAL REMEDIES

During July the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies:

Merck & Co.: Betanaphthol Benzoate.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Caustic Applicators, Special (Silver Nitrate, 50 per cent).—Wooden sticks, 12 in. long, tipped with a mixture of silver nitrate 50 per cent and potassium nitrate 50 per cent. Antiseptic Supply Co., New York (*Jour. A. M. A.*, July 3, 1915, p. 29).

Enzymol.—An extract of the fresh animal stomach containing the gastric enzyme in active standardized form and having an acidity due to combined hydrochloric acid. Enzymol is stated to be useful as an application to old sores, ulcers and slow healing wounds. It is said to correct offensive odors, to exert a solvent action on pus, sloughing and necrotic tissue and to impart a healing stimulus. For the solution of necrotic bone and in some abscesses hydrochloric acid is added to the diluted extract (*Jour. A. M. A.*, July 24, 1915, p. 333).

---

**Swimming Pools.**—Full directions are given for the use of copper sulphate for the purification of swimming pools by S. J. Thomas, South Bethlehem, Pa. (*Journal A. M. A.*, Sept. 25, 1915). He holds that the usual methods of disinfection may destroy the bacteria existing at the moment in the water, but they do not keep it pure after it has been used. Bleaching powder introduced into the pool in germicidal quantities is too irritating, while copper sulphate can be used without any disagreeable results. He has found by experiment that about one-twentieth part of copper sulphate to a million parts of water will keep it pure and is the proper amount for pools averaging not more than from 100 to 150 bathers per day. If the capacity of the pool is not known, it may be determined by multiplying the length by the width and the result by the average depth in feet. As a cubic foot of water weighs 62.5 pounds, the capacity divided by twenty million will give the amount of copper sulphate that should be added daily. It is best, he says, to use it between the two most popular times of using the pool, such as noon, when there are large morning and afternoon classes, and at supper time if there are large afternoon and evening classes. The first requisite, of course, in the sanitary management is the proper cleansing of the bathers before they enter the pool; a thorough shower bath with warm water and soap should precede the plunge. When possible, no clothing whatever should be allowed, but in the case of public pools, those for girls, Y. W. C. A. pools, etc., bathing suits of light color and material should be insisted on and these should be washed in disinfecting solution at frequent intervals. Thomas calculates the expense of copper sulphate for an average pool at present prices at about \$7 a year.

## The Academy of Medicine of Cleveland

### COUNCIL MEETING

At a special meeting of the Council of the Academy of Medicine, held Wednesday, July 21, 1915, at the Bismarck, the following members were present: The First Vice President, Dr. M. J. Lichty, in the chair; Drs. Skeel, Moorehouse, Way, Webster, Sawyer, Storey, Cogan, Taylor, Ford, Follansbee, Humiston, Todd, Weir, J. J. Thomas and J. E. Tuckerman.

Due to the late arrival of Dr. Thomas, Dr. Sawyer presented a brief outline of the situation which confronts the *Cleveland Medical Journal*.

The *Journal* is the official organ of the Academy of Medicine of Cleveland. It was the first private journal to adopt the advertising standard of the American Medical Association and has since then been operating at a deficit under a guarantee fund subscribed to by a few men.

The cost of the *Journal* per annum per member of the Academy is \$3.25. Of this the Academy pays \$1.00. The balance must come of necessity from advertising or some guarantee fund.

Dr. Sawyer stated that the directors of the *Cleveland Medical Journal* came to the Council, not primarily for additional financial support, although that would be appreciated, but to get the sense of the Council and through them of the Academy as to whether the members of the Academy wish the *Journal* to be continued.

On motion by Dr. Humiston, seconded by Dr. Ford, it was given as the sense of the members of the Council that it was desirable to have the *Journal* continued, but upon the condition that it continue to adhere to the advertising standard of the American Medical Association.

Dr. Lichty having to leave, Dr. Lichty took the chair.

After considerable discussion and a statement of the financial situation of the Academy, Dr. Ford moved that the Council reconsider its recommendation for increasing the annual dues to \$8.00. Carried.

Dr. Ford then moved that the Council recommend to the Academy an annual due of \$10.00 per member, with a view to making the pro rata for Academy members to the *Journal* \$2.00 instead of \$1.00. Carried.

---

At a meeting of the Council of the Academy of Medicine held Wednesday, September 8, 1915, at the Bismarck, the following members were present: The President, Dr. C. F. Hoover, in the chair; Drs. Moorehouse, Houck, Storey, Taylor, Sanford, Cogan and J. E. Tuckerman.

On motion the following were elected to active membership: Walter J. Irwin, M. D.; H. W. Krapohl, M. D.

On motion the names of the following applicants were ordered published: For active membership—Morrison H. Castle, M. D.; John F. Corrigan, M. D.; Lyle Steen Hill, M. D.; W. J. Quigley, M. D. For non-resident membership—M. D. Ailes, M. D., Garrettsville, Ohio.

On motion the following were given letters of transfer: Dr. R. L. Cameron, to The Mahoning County Medical Society at Youngstown, O.; Dr. Pio Milani, to The Medical Society of Utica, N. Y.

Dr. Don B. Lowe, now of Akron, Ohio, was transferred to non-resident membership in the Academy.



## BOOK REVIEWS

**Occupational Affections of the Skin.** By R. Prosser White, M. D., M. R. C. S., London. Paul Hoeber, New York, 1915. Price \$2.00.

As the author himself states, this little monograph of 165 pages "sprang from his own necessities." Frank Crozer Kumles says "fully one-quarter of all eczemas are of definite external origin," and probably one-sixth of all skin diseases, as Doctor White says, are due to the occupation of the individual. Hence we can see the importance of the subject, and for a book of its size the author takes up each affection quite fully, going very carefully into the chemistry of the different processes at fault. And not only does he describe the lesions caused by occupations, but he also goes quite thoroughly into the skin affections due to any external irritant whatsoever, e. g., "grain itch" and "brown-tail moth dermatitis," two affections that have been brought quite prominently to the attention of American medical men in the past two or three years. The volume is very interesting, quite readable, and well worth any physician's time for two or three evenings. Moreover, it fills a real want in the English language, and will serve to clear up many a knotty case where the attendant is confident that there has been some external cause and yet is unable to find same.

H. N. C.

## ACKNOWLEDGEMENTS

**Student's Textbook of Hygiene.** By W. James Wilson, M. D., D. Sc., D. P. H., Bacteriologist of the Counties of Down and Antrim, Lecturer in Hygiene and Public Health, Queen's University, Belfast. Rebman Company, New York. Price, \$2.50.

**Twelve Lectures on the Modern Treatment of Gonorrhea in the Male.** By Dr. P. Asch (Strassburg). Translated and annotated by Faxton E. Gardner, M. D., Lecturer and Assistant Visiting Genito-Urinary Surgeon, New York Polyclinic; Assistant Genito-Urinary Surgeon, Bellevue Hospital, Out-Patient Department, New York City. Illustrated. Rebman Company, New York. Price, \$1.00.

**A Textbook of Histology.** By Rudolf Krause, A. O. Professor of Anatomy at the University of Berlin. Translated from an original manuscript and printed only in the English language. Illustrated. Rebman Company, New York. Price, \$2.50.

**The Book of the Fly.** A nature study of the house-fly and its kin, the fly plague and a cure. By G. Hurlstone Hardy. With an introduction by Halford Ross. Rebman Company, New York. Price, 80c.

**The Practical Medicine Series, 1915, Volume II, General Surgery.** Edited by John B. Murphy, A. M., M. D., LL. D., F. R. C. S., England (Hon.), F. A. C. S., Professor of Surgery in the Northwestern University; Attending Surgeon and Chief of Staff of Mercy Hospital and Columbus Hospital; Consulting Surgeon to Cook County Hospital and Alexian Brothers' Hospital, Chicago. The Year Book Publishers, Chicago. Price, \$2.00.

**The Practical Medicine Series, 1915, Volume III, The Eye, Ear, Nose and Throat.** Edited by Casey A. Wood, C. M., M. D., D. C. L.; Albert H. Andrews, M. D.; William L. Ballenger, M. D. The Year Book Publishers, Chicago. Price, \$1.50.

**Habits That Handicap. The Menace of Opium, Alcohol and Tobacco, and the Remedy.** By Charles B. Towns. The Century Company, New York, 1915. Price, \$1.20.

**A Synopsis of Medical Treatment.** By George Cheever Shattuck, M. D., Assistant Physician to the Massachusetts General Hospital. Second edition, revised and enlarged (second printing). W. M. Leonard, Publisher, 1915. Price, \$1.25.

**Fractures and Dislocations. Diagnosis and Treatment.** By Miller E. Preston, A. B., M. D., First Lieut. M. R. C., U. S. A.; Surgical Examiner, Colorado State Board of Medical Examiners, etc. With a chapter on Röntgenology, by H. G. Stover, M. D. 860 illustrations. C. V. Mosby Company, 1915. Price, \$6.50.

**The Starvation Treatment of Diabetes. With a Series of Graduated Diets as Used at the Massachusetts General Hospital.** By Lewis Webb Hill, M. D. and Rena S. Eckman, Dietitian, with an introduction by Richard C. Cabot, M. D. W. M. Leonard, Boston, 1915. Price, \$1.00.

## MEDICAL NEWS

**Dr. Walter G. Stern**, of Cleveland, has been appointed Consulting Orthopedic Surgeon to the recently opened Gates Hospital for Crippled and Deformed Children, at Elyria, Ohio.

**American Medicine Gold Medal**—The trustees of the American Medicine Gold Medal Award respectfully announce that the medal for Nineteen Hundred and Fifteen has been conferred upon Doctor Rupert Blue, Surgeon General U. S. Public Health Service, as the American physician who in their judgment has performed the most conspicuous and noteworthy service in the domain of medicine and surgery during the past year.

**Mr. George Eastman Endows Great Dental Dispensary**—Rochester, N. Y., is to be the next city in the United States to be blessed with a great dental dispensary, completely equipped and amply endowed for carrying forward the beneficent work of dental hygiene according to approved methods.

The donor is Mr. George Eastman, president of the Eastman Kodak Company, and the gift, including the cost of building, value of land, and the prospective endowment, will reach the magnificent total of \$1,200,000.

For several months Mr. Eastman has been deeply interested in the subject of preventive dental work among children. He visited the Forsythe Dispensary in Boston, one of the greatest institutions of its kind, and carefully studied its work, and the more he understood the scope of the work the more deeply interested he became. Then after a conference with the Rochester Dental Society, he made the proposition to the Society that he would build and equip a dental dispensary at a cost of from \$250,000 to \$300,000, this conditioned upon the willingness of the city to furnish at least \$20,000 a year for five years, an amount sufficient to carry on the prophylactic work in the schools; that private citizens contribute \$10,000 a year for five years, and Mr. Eastman himself would contribute \$30,000 a year for five years. At the end of that time Mr. Eastman will furnish an endowment of \$750,000 if these conditions have been met and the work is being carried on satisfactorily. The work has been thoroughly outlined and every detail has been gone into with Mr. Eastman. The building will be three stories and will be provided with every convenience for advanced dental study including educational and research work—oral surgery—orthodontic work to be a special feature. There will be fine research and radiographic laboratories. There will be regular courses of lectures for the internes and members of the staff and a training school will be established for women who are preparing to take up prophylactic work. In time it is planned to send these women into the schools of the city to do this work and to instruct the children as to the necessity for taking care of the teeth, thus opening up a new field for young women in this important part of preventive philanthropy.

The entire dental profession will acknowledge its grateful appreciation to Mr. Eastman, while at the same time offering congratulations to the city of Rochester, on its great good fortune.

The dedication of the Forsythe Dental Infirmary in Boston, last November, marked an epoch in dental history. At that time, its donor, Thomas Alexander Forsythe said:

"It has been my wish that the Infirmary should be as a home to the children, beautiful and cheerful; a protector of their health, a refuge in their pain. By making them healthier and happier, I hope it may make them grow to be better citizens of our beloved Boston. If this is accomplished, as I believe it must be, with the co-operation of the dental profession, I shall feel that the gift has been well bestowed."

This is the idea Mr. Eastman has in mind when he makes this princely gift to the children of Rochester, to the children who, for one reason



or another, cannot meet the expense of expert dental work, many of whom suffer all through life because of neglect of their teeth.

**The Wood Dinner.**—One of the brilliant events of the 71st annual Institute session held in Chicago, was the "Wood Dinner." This occurred on Thursday evening, July 1, in the Louis XVI room at Hotel Sherman, and was given in honor of Doctor James Craven Wood, of Cleveland, in testimony of his services in gaining for the American Institute and its affiliated surgical societies, recognition by the American College of Surgeons.

In this work Doctor Wood requested, not only admission for homœopathic surgeons, on an equality with the surgeons of the dominant school, but insisted upon representation in the management and control of said college. All this was finally granted and obtained and the Institute now has members on the Board of Governors.

That Doctor Wood gained a signal victory without conceding in any particular the rights and principles of homœopathy is told in the tenor of the correspondence carried on between his committee and the secretary of the American College of Surgeons.

The College of Surgeons, organized and composed of the broad-minded, scientific surgeons of this country, had no game to play and no political or sectarian strings to pull. Merit, and merit alone, has been the principle upon which its members were admitted, and the homœopathic surgeons and surgeon-specialists were admitted to membership because they were recognized as scientific men and women in the great field of medicine. Medical sects, principles or beliefs play no part in this organization, and the oath of membership carries with it only those high ideals which every medical man of culture, education, honesty and sincerity strives to uphold in his every day life.

No prettier affair has ever been given than was seen on this occasion. The Louis XVI room, decorated with lavish and exquisite taste, was a bower of floral beauty; while the banquet table arranged in U-shape, around which were seated some 125 ladies and gentlemen, composed of the Fellows of the College, members of the Institute, and friends, presented a galaxy of beauty and an array of intellect.

The repast, so the Maitre D'Hotel informed us, was as elaborate as ever served at the Hotel Sherman, and words fail to express the dainty, tasteful, delicious dishes which made up the ten courses of the menu.

Doctor Charles E. Sawyer, toastmaster, occupied the center of the speakers' table, while beside him sat Doctor Wood, and on either side were assembled the speakers of the evening. The apropos remarks and repartee displayed by Doctor Sawyer in introducing the speakers and dispersing wit with eloquence, stamped him as one of the champion after-dinner speakers of the Institute.

To lend lightness and humor to the occasion which was considered by most of those present as a serious event, Doctor Sawyer, during the intermission between courses, called upon the "New England Wit," Mary E. Mosher, whose capital stories in humor and gesture convulsed the somber audience with laughter and placed all in good humor, which was a fitting set-off for the more solemn remarks to follow.

Doctor Scott Parsons, the first speaker, whose topic was "The Surgeon of Today," gave a brief sketch of the surgeon of yesterday in comparison. He called the surgeon of today an idealist, qualified by his education, special surgical training, honesty, sincerity, idealism and charity, and in closing stated that he wished to name one who fulfilled all the qualifications of the surgeon of today—a gentleman, a scholar and a humanitarian, as exemplified in the character of James Craven Wood.

Doctor George W. Roberts, who was to respond to the toast "The Surgeon of the Future," was called home and his remarks were embodied in the response of Doctor Leon T. Ashcraft, who spoke of "Doctor Wood and the American College of Surgeons." Doctor Ashcraft recalled the earnest work of Doctor Wood in his endeavors and success in gaining recognition for the homœopathic surgeons, and paid high tribute to the manner in which this had been accomplished.





The Economic Loss Due to Prostitution.  
 The Administration of the White Slave Traffic Act by  
 the Federal Government.  
 The Success of the Injunction and Abatement Law.  
 The Education of Public Opinion in Regard to Social  
 Hygiene.  
 The Present Status of Education with Reference to Sex.  
 The Newspaper as a Moral Educator.  
 The Progress of the Social Hygiene Movement in the  
 United States.

A later announcement will give a complete list of the speakers.

The Advisory Committee for the Conference in under the leadership of President Abram W. Harris of Northwestern University, and the members of the Committee are: Miss Jane Addams, Hull House, Vice President American Social Hygiene Association, Chicago; Hon. George Cosson, Attorney General, State of Iowa; Rev. George R. Dodson, D. D., President St. Louis Social Hygiene Society, St. Louis, Missouri; Dr. Frederick R. Green, Secretary Council on Health and Public Instruction, American Medical Association, Chicago, Illinois; Dr. T. L. Harrington, President Milwaukee Society for Suppression of Commercialized Vice, Milwaukee, Wisconsin; Mrs. Ellen M. Henrotin, Chicago; Mr. Emil G. Hirsch, Chicago, Illinois; Mr. V. H. Lockwood, Indianapolis, Indiana; Prof. W. A. McKeever, University of Kansas, Lawrence, Kansas; Mrs. Raymond Robins, Member Board of Directors of American Social Hygiene Association, Chicago; Mrs. P. E. Rood, President Toledo Federation of Women's Clubs, Toledo, Ohio; Rev. Marion D. Shutter, D. D., Minneapolis, Minnesota; Dr. R. H. Stevens, President Michigan Social Hygiene Society, Detroit, Michigan; Prof. Graham Taylor, President School of Civics and Philanthropy, Chicago; Dr. John D. Trawick, President Kentucky State Social Hygiene Society, Louisville, Kentucky; Dr. Rachelle Yarros, Hull House, Chicago.

It is not the object of the American Social Hygiene Association to make the Conference a large gathering, although the public is cordially invited to the meetings. It is the object of the Conference to provide an opportunity for persons interested in education with reference to sex, the control of venereal diseases, the suppression of prostitution, and in the up-building of public morality and health to discuss with the leaders in these various phases of the social hygiene movement, such problems as may be pressing upon their respective communities. There will be a general "taking of stock," an estimation of our progress, and a survey of the ultimate meaning of events and ideas in the field of social hygiene. There will be opportunity for the expression of opinion and for the relation of experiences bearing upon the subjects under consideration.

All persons interested in any phase whatever of the social hygiene movement are invited and urged to attend the Conference. The field secretary of the Central States Division is glad to give information regarding the Conference. Address 1949 Peoples Gas Building, Chicago, Illinois.

---

**Where the Blame Lies.**—*The Journal of the American Medical Association* for September 25 gives some information regarding a nostrum that for years has been advertised to—and of course prescribed by—the medical profession. The article closes with this sentence: "That physicians have for years tolerated a nostrum like 'Micajah's Uterine Wafers' is an unfavorable commentary on the medical profession." As the percentage of physicians who prescribe this nostrum is undoubtedly extremely small, and consists of the unthinking or the uneducated, why, it may be asked, should the medical profession as a whole be blamed? Because the medical profession as a whole continues to support—either by contributing to, or by subscribing for—medical journals that carry advertisements that make the continued existence of such products possible.

**Gastric Ulcer and Cancer.**—A. J. Ochsner, Chicago, reviews the evidence of the derivation of gastric cancer from ulcer and thinks that this origin in many cases escapes detection, and that the pathologic evidence is misleading, because until very recently but a small proportion of cancers surgically removed were operated on early enough to reveal readily the ulcer margin of the cancer. Rodman, Mayo, and others have constantly directed our attention to the significant fact that the ulcer-bearing areas of the stomach are also those most commonly occupied by cancer, and this has led to much discussion. Some have claimed that because of this fact all ulcers should be excised at the time of operation, and some observers, because they do not find cancer at operation, have claimed there can be no definite causal relation between the two. The fact also that cancer rarely occurs in the duodenum has been used as an argument. This, however, Ochsner explains, by the difference in the conditions in the duodenum and the stomach. In the stomach there is a great deal of trauma because of the violent action of the muscles at the pyloric end. This causes irritation and we know that this is a causal factor in cancer. Moreover, intestinal contents are held in contact on the gastric side for considerable time each day, while on the duodenal side they are passed on immediately. Recent observations, especially those of Abelmann and Carl Beck, seem to point toward the inoculability with cancer virus. That transplantation of cancer from the upper portion of the alimentary tract to the stomach is possible has been shown by Fütterer and is supported by analogy elsewhere. Whether the presence of an acid medium on the gastric side and an alkaline one on the duodenal side has any relation to the cancer infection cannot be stated at the present time, though the rarity of cancer in the liver, which acts as a filter of all the blood, would seem to point to inhibitory qualities in the bile. When experimental work shall have convinced pathologists generally that cancer is due to an infection, as Ochsner is convinced that it is, the causal relation between cancer and ulcer of the stomach will be clear. The observation that ulcer does not commonly result in cancer after relief from operation for the former condition would indicate that ulcer simply acts as an opening for the infection of carcinoma, and when it is healed the patient is again protected. The relative preponderance of cancer in men over women is also found in ulcer and this points to a definite causal relation of the two. From his studies in the past ten years and examinations of cancer of the stomach operated on he has found in all cases not too far advanced, evidence of previous existence of an ulcer, and careful search for all facts can always elicit from the patient evidence to support this position. Coming down to the practical points, it seems clear that if ulcer usually precedes cancer we can, by early treatment, eliminating the causes of gastric ulcer and aiding in its cure, reduce the mortality to a very great extent. Much attention should be given to the early history of these cases and prevention of feeding these patients with unclean, uncooked foods. Not everyone who has gastric ulcer will ultimately have cancer, but it is wisdom's course to close the opening for the cancer by healing the ulcer early and permanently.—*Journal A. M. A.*



# The Cleveland Medical Journal

Vol. XIV

SEPTEMBER 1915

No. 9

## BRANCHIOGENIC CARCINOMA, WITH REPORT OF A CASE

By MAURICE L. RICHARDSON, from the Department of Pathology,  
School of Medicine of Western Reserve University, and  
Pathological Laboratory of Lakeside Hospital.

Branchiogenic carcinomata form a group of tumors which should be considered among tumors arising in the lateral region of the neck. They arise from remnants of branchial ducts or glands, but the exact mode or origin is obscure. Carcinomata definitely arise in branchial cysts and fistulae. These are of two types, 1st, those arising from embryonic ectoderm and composed of cells nearer the type of squamous epithelium, and, 2nd, those arising from embryonic ectoderm and composed of columnar or cuboidal cells; and the type of cell depends on whether the original cyst or fistula was of external (ectodermal) or internal (entodermal) origin. According to Kostcinecki and Mielecki<sup>1 2</sup> the immediate origin of cysts or fistulae is from a persisting sinus cervicalis or branches therefrom. However, there are other sources. Hammar<sup>3</sup> in the study of a sheep embryo found a fistula leading from the left surface of the neck to the thymus and on the right side a distinct neck thymus. From this he concludes that at least some branchial fistulae are from the ductus thymo-pharyngeus. Weglowski<sup>4 5 6 7</sup> supports Hammar's views and says that all are derived from ductus thymo-pharyngeus. Lorenz<sup>8</sup>, in his study of the relation of fistulae to the blood vessel, glosso-pharyngeal and facial nerves, decides that at least some fistulae come from the second arch.

There is, however, apparently another origin for solid branchiogenic tumors; that is, the post branchial or ultimo branchial gland. This gland has been studied by Getsowa<sup>11 12</sup> and others. It is derived from the rudimentary 5th branchial arch and in the lateral growth of the thyroid becomes closely associated with, or incorporated in, the lateral lobes. The gland when it persists, consists of characteristic cells often associated with ducts lined with simple, irregular cells, at times ciliated, or it may be present only as a cyst. Langhans<sup>13</sup> describes tumors similar if not identical in structure, and Getsowa calls them "struma post-branchialis." Perez<sup>8</sup> reports six cases of branchiogenic carcino-

mata. Lorenz<sup>9</sup> in his article reports eight cases of his own and collected 64 cases from the literature. In his article he tabulates the cases with the name of the author who described them, and gives a comprehensive bibliography. During the last two years Kolaczek<sup>10</sup>, McKenty<sup>14</sup> and others have reported cases. Inasmuch as the article by Lorenz reviews the cases completely, the literature will not be reviewed further. Of the cases reported by Lorenz, 61, or 95.3 per cent, were in males. In 8 cases, or 12.5 per cent, the presence of metastases was stated. In 14 cases, or 21.8 per cent, the diagnosis was given cyst-carcinoma. McKenty reports 5 cases, 4 of which were males. v. Mielecki<sup>15</sup> found of 487 autopsies with carcinoma, three were of branchiogenic origin. Of the 3 cases, 2 showed no metastases, and one metastases in the regional lymph nodes.

History and clinical picture: The patients can be roughly divided into two groups; 1st group—Those in which a small superficial tumor or cyst has been present for a varying length of time, perhaps since birth. It is usually present below the lower jaw and anterior to or beneath the sternocleidomastoid muscle. The tumor suddenly begins to grow, is usually hard but later may become soft and fluctuant. At this stage it is sometimes opened on the assumption that it is a suppurating lymph node. When opened either a bloody or gray granular fluid escapes. A sinus persists, becomes infected and then a true pus escapes from the wound. The growth continues rapidly, with extension and involvement of the deeper structures of the neck. The second group forms the so-called “deep branchiogenic carcinomata.” In this type no superficial tumor is visible at first and only rather careful examination will reveal any asymmetry of the neck. The patient first notices that he is having difficulty in swallowing, or breathing; the voice is also husky. It is usually not until after these symptoms have appeared, or until pain in the involved side of the neck and corresponding side of the face calls his attention to trouble, that he notices that a mass is present. Both type of tumor early become fixed to the surrounding structure, due to invasion, and frequently involve the structures of the carotid sheath, the oesophagus, trachea and adjacent muscles. This is in contra-distinction to metastatic tumors in cervical lymph nodes, which become fixed at a much later date, if at all, and do not involve the deeper structures. Another very frequent symptom is severe pain on the side of the neck involved, radiating to the same side of the face, back of head and shoulder. This is in contrast to the painlessness of metastatic tumors in this region.



These points, especially if supported by a careful and complete history and surgical data, strongly favor the diagnosis of primary branchiogenic carcinoma.

However, in spite of the above characteristic points, the diagnosis clinically must be to a certain extent by exclusion. Probably the most difficult tumors to differentiate are metastases from carcinoma of the parotid or sub-maxillary salivary glands. Primary tumors in other structures, thyroid, pharynx, larynx, carotid body, face, mouth, nasal cavity, tongue and more rarely oesophagus or even stomach with cervical metastases, must be considered and excluded if possible.

Grossly the tumors may, if they originate from a cyst, be partly cystic or they may be primarily and entirely solid. These structures grossly are in general the same as other firm epithelial tumors. However, the blood supply is usually distinctly scanty, and this leads to the frequently observed fact that the entire interior of the tumor is necrotic, either fluid and granular or in the form of a friable semi-solid mass. Microscopically there is a distinct connective tissue stroma. The tumor cells are arranged in cords or strands having a roughly plexiform arrangement with no stroma between individual cells. In addition there are also rests containing cells more densely packed together. The cells themselves are polyhedral, of irregular size and with abundant pale granular cytoplasm. The nuclei are usually densely staining and show distinct chromatin patterns, and are of irregular size and shape. A frequently observed fact is the great number of mitotic figures, many of them asymmetrical and multiple. The cells are usually loosely arranged and give evidence of rapid growth. This, together with the poor blood supply, leads not only to gross areas of necrosis but to numerous isolated degenerated cells or cell groups and to many karyorrhectic nuclei and isolated groups of nuclear granules.

The present case was admitted to Lakeside Hospital July 3rd, 1914, in the service of Doctor C. F. Hoover, who has studied the case clinically and has kindly furnished clinical records. The patient was a business man, 42 years of age, and came in complaining of loss of voice. His family history is unimportant with respect to the present condition. He had syphilis twenty years ago with slight secondary manifestations. He was well treated at that time and had fairly frequent courses of anti-syphilitic

treatment since. He has never noticed a tumor or swelling in his neck until immediately preceding the present illness and has never had trouble swallowing or talking.

The onset of the present illness was four months before admission to the hospital. About a month previous to this he noticed that his neck was getting larger and as a result had to wear larger collars. He noticed a mass in his neck, but con-

## PLATE I

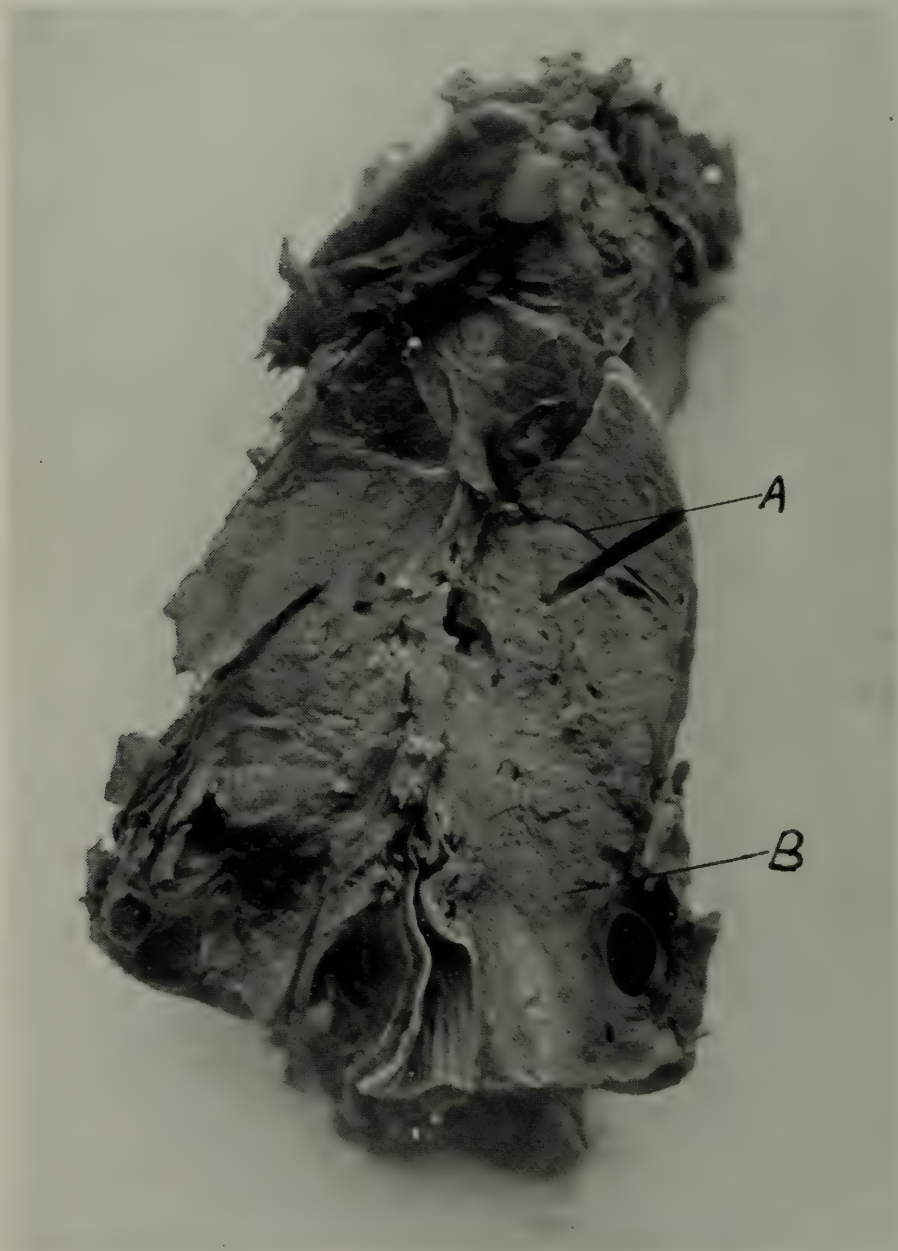


Fig. 1

Sagittal section through the specimen about 1.5 cm. to the right of the midline.

Shows the tumor and the displacement of the thyroid gland upward.

A.—Boundary between the thyroid gland and the tumor.

B.—Lower margin of the tumor.



sidered it a goitre. The onset of the present illness was sudden. The voice suddenly became hoarse and within two hours had completely disappeared. This probably called his attention to the fact that he had difficulty in swallowing, as it was noticed at about the same time. Since the onset he has only been able to talk in a whisper.

Physical examination: showed an enlarged right lobe of the thyroid described as irregular and very hard. The larynx is freely movable but displaced 1 cm. to the left. No tenderness. No lymph node enlargement. Laryngoscopic examination showed paresis of the right cord, but no erosion or tumor. The patient had marked difficulty in swallowing. Soon after admission the right lobe of the thyroid became acutely swollen, red, tender and painful. With it there was an increase in temperature to 106 degrees. This inflammatory process subsided in 5 to 6 days. Later the patient developed pneumonia and died on July 24th, 1914. At autopsy in the right side of the neck was a tumor mass 6 x 4 x 3 cm. wedged in between the trachea and the right

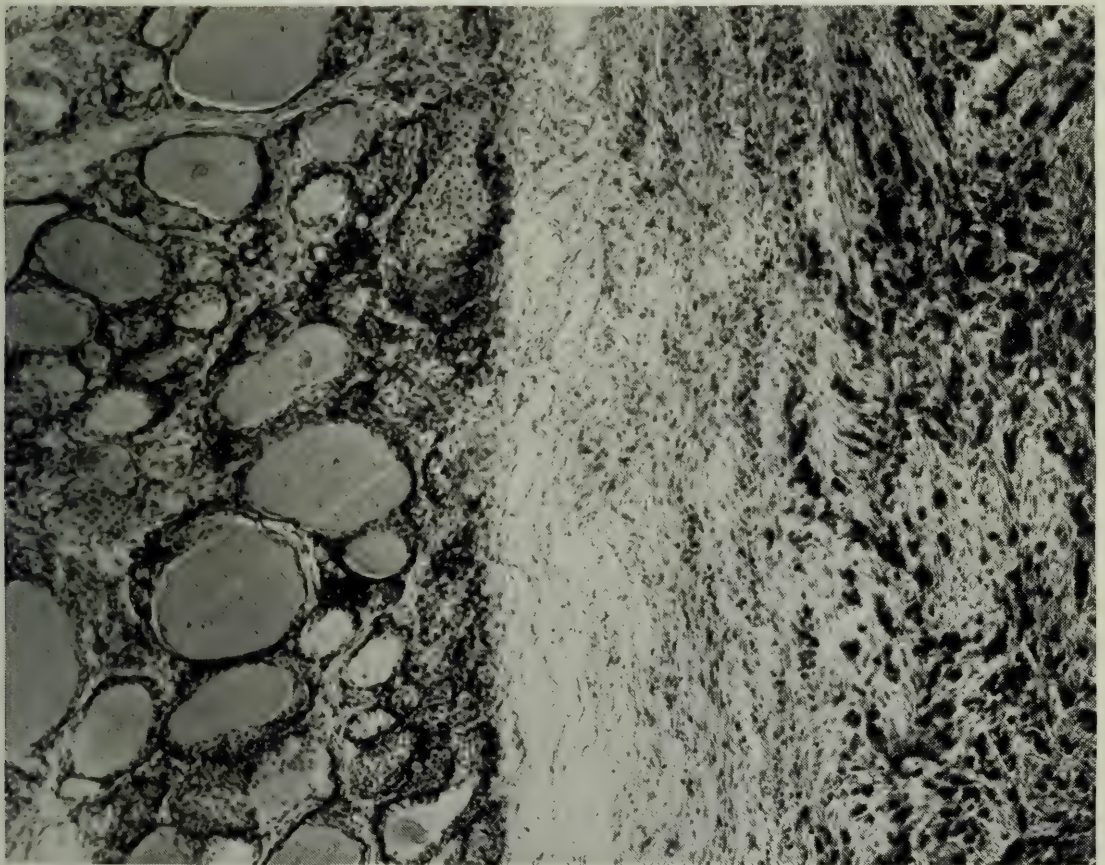


Fig. II

Photomicrograph showing the dense connective tissue between the tumor and the uninvaded thyroid tissue.



lobe of the thyroid. The latter was displaced anteriorly and especially upward. (See Fig. 1). The tumor was firmly adherent to the trachea and nodules projected into the lumen. The oesophagus was extensively invaded, and at the point of attachment markedly stenosed. It was also attached to the thyroid and to the neighboring muscles. The entire inner part of the tumor was necrotic, gray in color, friable but still firm, and it showed several rather coarse connective tissue strands. Microscopically the tumor was sharply demarcated from the thyroid by connective

## PLATE II

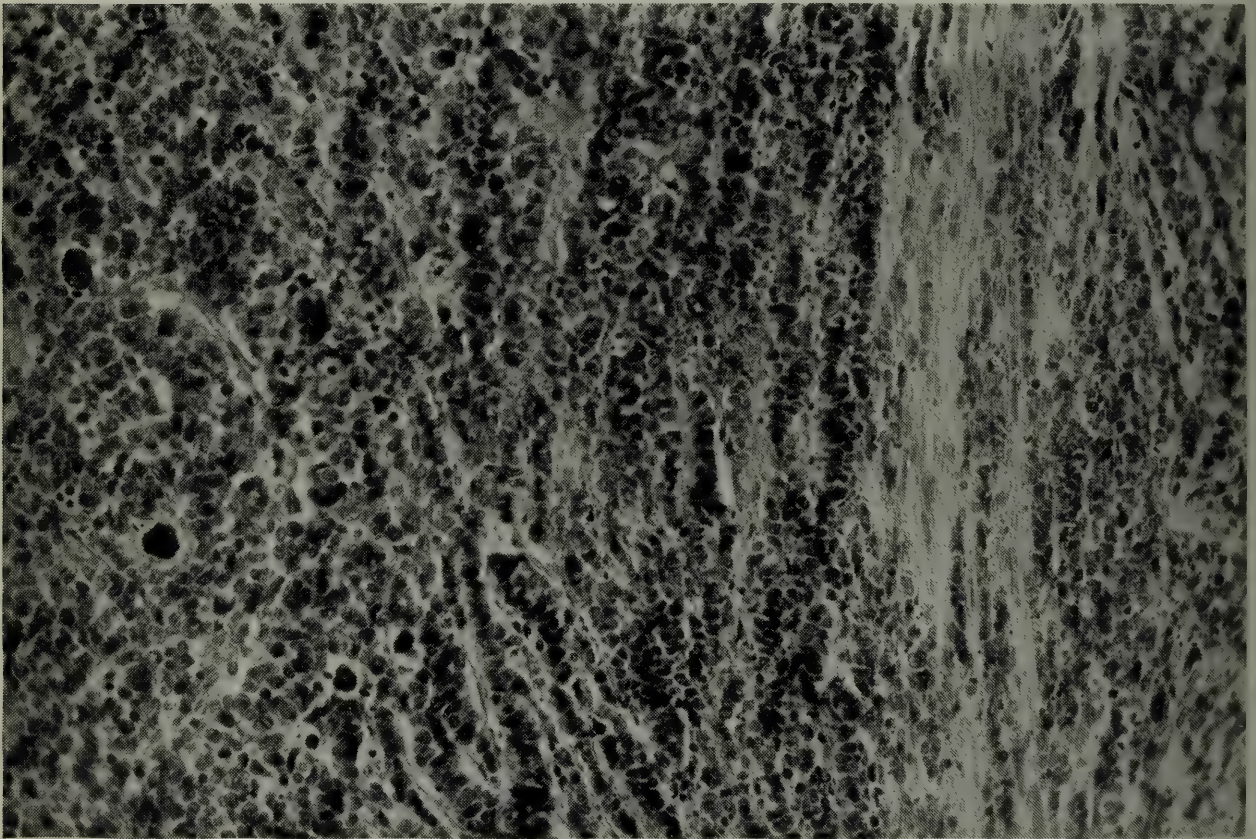


Fig. III

Photomicrograph showing the general architecture of the tumor.

tissue (See Fig. 2), but in a few areas showed invasion of the blood vessels and lymph channels at the adjacent margin of the thyroid. It did not involve the epithelium of the trachea nor the oesophagus. Its main growth was by extension. In the neighboring lymph nodes no distinct metastases could be found. In the lungs, however, there were several cords of cells similar to those of the tumor and they were undoubtedly metastases.

The tumor has a fine connective tissue stroma. The blood supply is poor. The vessel walls are markedly thickened



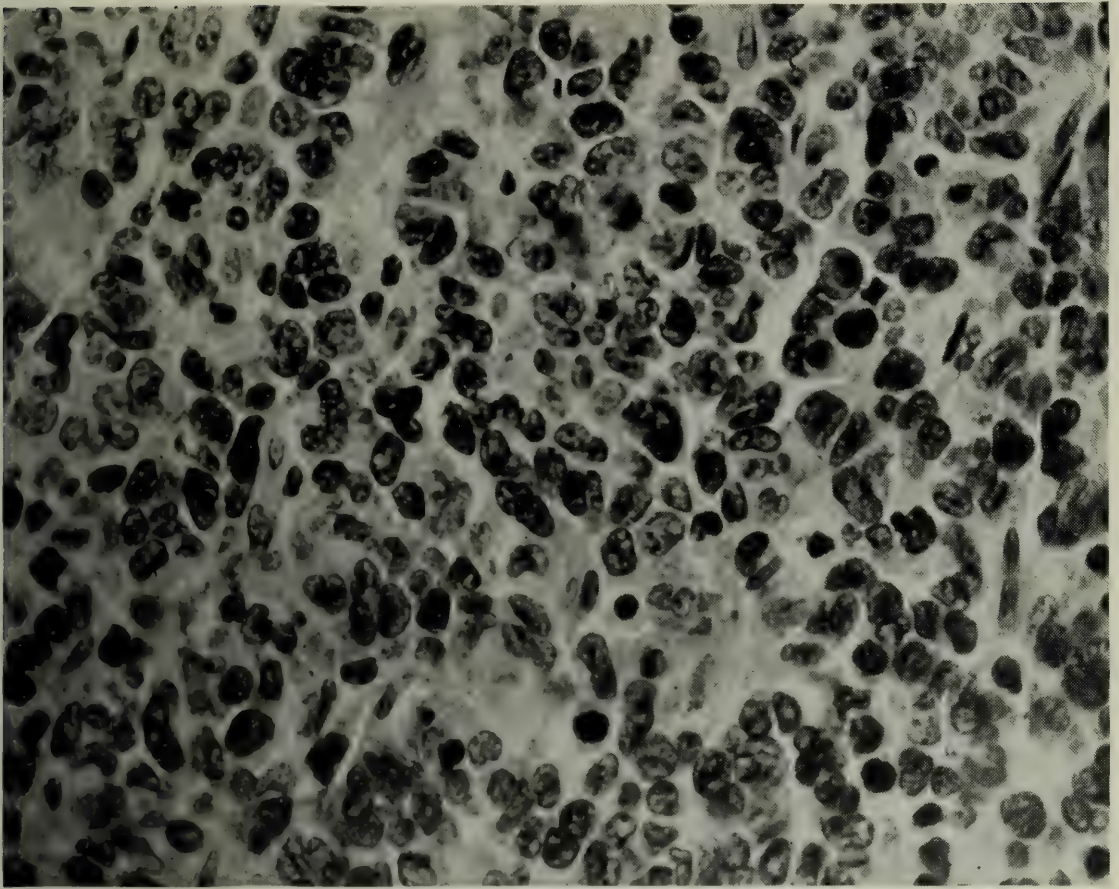


Fig. IV

Photomicrograph showing the structure of the tumor cells and the frequent mitotic figures.

X500.

and occasionally calcified. The cells are arranged mostly in solid cords 2 to 5 cells in cross section (Fig. 3). There are also round nests containing a greater number of cells. Throughout the sections, but especially in focal areas, there are many degenerated or necrotic cells and nuclear fragments. The cells themselves are large, pale, with indistinct outlines and faintly staining protoplasm. The nuclei are large, faintly staining, and have a delicate chromatin pattern (See Fig. 4). Throughout all the sections there are many mitotic figures, mostly single, but many multiple, and sometimes of huge size. At no place was colloid seen. There were no distinct ducts or ciliated epithelium.

**Discussion and Conclusion:** The tumor is certainly a primary carcinoma originating in the neck. The entire history and physical examination points to this conclusion. The autopsy was complete except the brain and spinal cord. No other primary tumor was present, and the only other tumor tissue at all were the metastatic cords in the lung. The position of the tumor and

its morphology rules out tumor of the carotid body. Hence the differential diagnosis lies between primary carcinoma of the thyroid, parathyroid and of the branchiogenic remnant. The thyroid was perfectly normal and sharply separated from the tumor by a thick connective tissue wall, but in some areas even though the wall was present, the blood vessels and lymphatics at the margin of the thyroid were filled with tumor cells. Even in these areas the thyroid tissue was normal. These facts, together with the known types of thyroid tumors and the morphology of the present tumor, rule out the thyroid as the origin of the tumor. As for the parathyroids, the two parathyroids on the left and the lower one on the right were easily found. As for the right upper parathyroid serial sections of the region well above and below its usual site, taking in the thyroid and the adjacent connective tissue and the tumor, in some blocks entirely out to the trachea, failed to reveal parathyroid tissue. This is what one would expect. The tumor grows by invasion, and could easily have invaded and obliterated the parathyroid. This appears more probable when one sees the marked degeneration and destruction of the striated muscle at points of tumor invasion. Again, the pressure on the parathyroid from the tumor growth could cause its atrophy, or also the interference with the blood supply could cause its necrosis. Finally, if the tumor had its origin in structures between the parathyroid and the thyroid or grew between them, the parathyroid would be displaced in the opposite direction, that is, downward and posteriorly, and if present would be in the masses of connective tissue at the posterior tumor margin. Under these conditions, to find it would be almost impossible and it is inconceivable that it could reach this point without total destruction. The history of the patient and the physical examination are very characteristic of deep-seated branchiogenic carcinoma, i. e., a deep, fixed, hard tumor of rather rapid growth, difficulty in swallowing, loss of voice, but not in this case difficulty in breathing; pain, while present part of the time during the patient's stay in the hospital, was not a constant feature. The location of the tumor with its gross structure and marked necrosis point to a branchiogenic tumor. The microscopic architecture and cellular structure is also characteristic and coincides almost identically with many tumors described. Hence, both by exclusion and by positive points, we can class this tumor as one of



branchiogenic origin. From an intensive study of the tumor it seems to the writer probable that the origin was from the post branchial body.

In conclusion I wish to express my deep indebtedness to both Doctor H. T. Karsner and Doctor David Marine for much help in the study of this case.

### Literature

1. Kostanecki, K., and v. Mielecki, A. Die angeborenen Kienenfisteln des Menschen, *Virchow's Arch. f. Path. Anat.*, 1890, CXX, 385.
2. Kostanecki, K., and v. Mielecki, A. Die angeborenen Kienenfisteln des Menschen, *ibid.*, 1890, CXXI, 55 and 247.
3. Hammar. Kongenitale Halskienenfistel, *Beitr. z. Path. Anat. u. z. allg. Path.*, 1904, XXXVI, 506.
4. Weglowski, R. Entstehung der mittleren Halsfisteln, *Zentralbl. f. Chir.*, 1908, XXXV, 290.
5. Weglowski, R. Entstehung der seitlichen Halsfisteln, *ibid.*, 1908, XXV, 426.
6. Weglowski, R. Ueber die Halsfisteln und Cysten, *Arch. f. klin. Chir.*, 1912, XCVIII, 151.
7. Weglowski, R. Ueber die Halsfisteln und Cysten, *Arch. f. klin. Chir.*, 1913, C, 789.
8. Perez, G. Ueber die branchiogenen Carcinome, *Beitr. z. klin. Chir.*, 1899, XXIII, 595.
9. Lorenz, H. E. Das branchiogene Carcinom, *ibid.*, 1913, LXXXV, 599.
10. Kolaczek, H. Branchiogenes Cystencarcinom, *ibid.*, 1914, XC, 609.
11. Getsowa, S. Ueber die Glandula parathyreoidea, intrathyreoideale Zellhaufen derselben und Reste des postbranchialen Körpers, *Virchow's Arch. f. path. Anat.*, 1907, CLXXXVIII, 181.
12. Getsowa, S. Zur Kenntnis des postbranchialen Körpers u. der branchiale Kanälchen des Menschen, *ibid.*, 1911, CCV, 208.
13. Langhans, T. Ueber die epithialen Formen der malignen Struma, *ibid.*, 1907, CXCVIII, 89 and 153.
14. McKenty, F. E. Tumor of the Neck, *Surg. Gynec. and Obst.*, 1914, XIX, 141.
15. v. Mielecki, W. Anatomisches und Kritisches zu 560 Obduktionen bei denen sich bäsartige Geschwülste fanden, *Ztschr. f. Krebsforsch.*, 1913, XIII, 505.

---

**Good Health Commercially Considered.**—Under the above title *The Journal of the American Medical Association* analyzes a final report of the Commission on Industrial Relations. It is interesting to note that each of the thirty-odd million wage earners in the United States loses an average of nine days a year through sickness, at an average cost of two dollars a day. The wage loss from this source is over five hundred million, while the added cost of medical care of at least \$180,000,000 increases the total sick bill of the wage earners of the United States to \$680,000,000 a year. From 30 to 40 per cent of cases requiring charitable relief are due to sickness, while sickness among wage earners is primarily the result of poverty, causing insufficient diet, bad housing, inadequate clothing and unfavorable surroundings in the home.

## EPIDEMIOLOGY OF WHOOPING COUGH AND DIPHTHERIA IN CLEVELAND IN 1914

From the Laboratory of Hygiene, Western Reserve School of Medicine,  
and the Cleveland Health Department.

By the Members of the Third Year Class and R. G. PERKINS.

The work summarized in the following pages was done by members of the class in Hygiene for the required thesis in that course, and is the third in the series. The previous papers have included measles and scarlet fever, but this year it was impossible to make a study of these diseases because of a lack of an adequate number of assistants. It may be possible to make a study of these diseases at a later time and so complete the series.

**Sources of Information.** The cases are investigated by the sanitary officers of the Health Department, each case being recorded on a separate card. They are filed at the Health Department, and by the courtesy of that department they were made accessible to the students, who made the necessary tabulations from them.

For comparative records from other places, the last available annual reports were used, as well as the reports of the Bureau of the Census.

### Whooping Cough

M. J. Ulrich

#### Monthly Incidence in Cleveland from 1906-1914

Month	1906	1907	1908	1909	1910	1911	1912	1913	1914	Ave.	Ave %
January .....	32	36	75	109	15	126	46	62	28	58.7	7.3
February .....	53	95	109	93	16	220	37	110	41	86.0	10.8
March .....	49	61	107	103	36	332	48	82	58	97.3	12.2
April .....	54	100	62	58	47	269	56	158	89	99.2	12.4
May .....	83	89	61	50	36	228	45	129	61	86.8	10.9
June .....	53	72	104	54	49	153	63	107	77	81.8	10.2
July .....	84	117	85	17	57	85	75	118	90	80.8	10.1
August .....	32	123	78	7	94	41	60	63	58	61.7	7.7
September .....	19	61	39	25	42	25	29	34	21	32.7	4.1
October .....	21	71	12	36	13	18	48	36	20	30.5	3.8
November .....	55	46	34	29	23	19	50	22	29	34.1	4.2
December .....	29	74	39	71	42	37	50	52	32	47.4	5.9
Total .....	564	945	805	652	470	1558	607	973	604	79.7	

This table shows very clearly that as a rule for the last nine years the disease in Cleveland has its greatest incidence in the late winter, spring and early summer. It will be seen from the table that the height of the epidemic for this year occurred during the spring, contrary to the usual belief that the greatest number of cases are recorded in the winter, and is thus in accord with the general rule stated above.



Ages	Sex and Age			Deaths Total	Percentage Mortality Total
	Males	Females	Total		
Under 1 yr.....	43	41	84	20	23.8
1-2 .....	36	35	71	10	14.1
2-3 .....	39	36	75	4	5.3
3-4 .....	45	35	80	2	2.5
4-5 .....	34	32	66	4	6.0
5-6 .....	34	33	67	0	0.0
6-7 .....	36	43	79	0	0.0
7-9 Incl. ....	30	27	57	0	0.0
10-14 Incl. ....	4	11	15	0	0.0
15- .....	0	2	2	0	0.0
16-17 .....	0	1	1	0	0.0
17-19 Incl. ....	0	0	0	0	0.0
20-24 Incl. ....	0	2	2	0	0.0
25-29 .....	0	1	1	0	0.0
30-34 .....	0	2	2	0	0.0
35-39 .....	0	0	0	0	0.0
40-44 .....	1	1	2	0	0.0
	302	302	604	40	6.6

It will be readily seen from this table that the greatest proportion of cases reported this year is in the first six years of life. This has also been true for previous years for which epidemiological studies have been made. In 1914 the cases were equally divided between males and females. In 1912 and 1913 there were more females than males affected.

The youngest case reported was one month (old), the oldest 42 years.

The total number of cases under school age was 443, and all the deaths, to the number of 40, occurred in this period, making the percentage mortality of those under school age 9.0.

On the basis of school age it was noted in addition that:

443 or 73.4% of all cases were under school age,

154 or 25.5% of all cases were of school age, and

7 or 1.1% of all cases were over school age.

### Mortality

This year the percentage mortality for the first year of life is 23.8, as compared with 18.6 in 1912, and 28.4 in 1913. For the second year of life the figure 14.8 as compared with 14.6 in 1912, and 12.8 in 1913.

All deaths occurred in children under school age.

It is evident from the data which has been presented that whooping cough is a disease of early childhood and that by far the greatest mortality occurs in the first year of life. The infer-

ence to be drawn from this is that very young children at least should be most carefully protected from exposure to whooping cough.

The complications as noted on the death certificates are detailed in the following table.

Complications	Total Deaths	Per Cent	Males	Females	Under 1 yr.	1 year and over
Broncho-Pneumonia .....	15	37.5	11	4	9	6
Bronchitis .....	4	10.0	1	3	2	2
Convulsions .....	3	7.5	2	1	2	1
Lobar Pneumonia .....	3	7.5	3	0	1	2
Oedema of the Glottis.....	3	7.5	0	3	2	1
Pulmonary Tuberculosis...	2	5.0	2	0	0	2
Meningitis .....	1	2.5	1	0	0	1
Marasmus .....	1	2.5	1	0	1	0
No complications .....	8	20.0	5	3	6	2
Total .....	40		26	14	23	17

This table shows broncho-pneumonia to be the most frequent complication, with bronchitis next in order.

For purposes of comparison the following table for Cleveland is presented, giving the number of deaths from all causes for the last fourteen years, the number of deaths from whooping cough, the estimated population, the percentage the deaths from whooping cough are of the total deaths, and the death rate from whooping cough per 100,000 population.

Year	Deaths from all causes	Deaths from W. C.	Estimated population	W. C. per cent of all deaths	Death rate of W. C. per 100,000 population
1900	6104	24	395000	0.394	6.1
1901	5834	11	390000	0.189	2.8
1902	6134	34	400000	0.555	8.5
1903	6799	45	420000	0.662	10.7
1904	6476	7	430000	0.108	1.6
1905	6424	24	440000	0.374	5.4
1906	7353	41	470000	0.558	8.7
1907	7678	36	500000	0.469	7.2
1908	7177	22	515000	0.307	4.3
1909	7032	29	515000	0.413	5.6
1910	8034	38	570000	0.474	6.7
1911	7967	87	580000	1.090	15.0
1912	8149	36	600000	0.442	6.0
1913	8842	69	625000	0.782	11.0
1914	8266	40	650000	0.484	6.2



The most striking point brought out by this table is the fact that there is practically no evidence to show that whooping cough has decreased in the last fifteen years.

The following table giving death rates from whooping cough per 100,000 inhabitants is presented so that a comparison may be made between Cleveland and some of the larger American cities:

City	1906-10	1911	1912	1913	1914
New York.....	7.0	8.7	5.0	7.8	5.2
Baltimore .....	15.1	8.1	7.5	7.1	15.5
Boston .....	11.2	15.6	10.4	13.2	6.7
St. Louis .....	5.7	4.1	7.7	3.0	9.6
Cleveland .....	6.5	15.0	6.0	11.0	6.2

### Summary

Total cases .....	604
Incidence per 100,000.....	96.7
Total deaths .....	40.0
Mortality per 100,000.....	6.2
Percentage mortality under school age.....	9.0
Percentage mortality during school age.....	0.0
Percentage mortality over school age.....	0.0
Percentage mortality in males.....	8.6
Percentage mortality in females.....	4.6
Total incidence among those of school age.....	154.0
Incidence per 1,000 of those of school age.....	1.3

### Diphtheria

C. F. Norlin and H. D. Pocock

#### Monthly Incidence in Cleveland from 1906-1914

Month	1906	1907	1908	1909	1910	1911	1912	1913	1914	Ave.	Ave. %
Jan. ....	137	162	61	149	60	136	105	224	282	146.2	8.8
Feb. ....	131	87	55	84	38	131	98	210	194	113.2	6.8
March ....	124	104	52	101	40	120	83	191	130	105.0	6.3
April ....	96	81	33	70	72	87	99	181	136	95.0	5.7
May ....	108	90	34	41	40	114	104	190	127	94.2	5.7
June ....	80	62	25	38	32	80	121	138	85	73.4	4.4
July ....	73	47	42	50	39	89	118	148	83	76.5	4.6
August ....	60	60	32	53	48	108	161	124	119	85.0	5.1
Sept. ....	116	48	67	71	71	160	243	247	199	135.7	8.2
Oct. ....	274	88	150	120	103	248	594	415	360	261.3	15.8
Nov. ....	250	93	191	134	110	206	526	404	390	256.0	15.5
Dec. ....	228	83	168	114	98	157	353	405	288	210.4	12.7

Total..1677 1005 910 1025 751 1636 2605 2868 2393 137.6

This table clearly shows that regularly the greatest incidence for diphtheria occurs during the months of October, November and December. It should also be noted that the marked increase in the number of cases reported occurs coincident with the opening of schools. On the other hand, the number of cases reported

during the summer or vacation months is comparatively small. The total incidence of 2,393 cases for this year is relatively high when compared with the average yearly incidence of 1,652 cases for the entire period. The incidence in 1912 and 1913 was also quite high. So the evidence seems to show that the prevalence of diphtheria has not decreased in recent years, but rather that it has increased.

### Sex and Age

Ages	Incidence			Deaths			Percentage mortality at each age		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under one year.....	24	17	41	9	8	17	37.5	47.0	41.5
One year, not 2.....	81	53	134	25	12	37	30.8	22.6	27.6
2 years, not 3.....	102	86	188	10	13	23	9.8	15.1	12.2
3 years, not 4.....	122	110	232	12	7	19	9.8	6.3	8.2
4 years, not 5.....	100	82	182	10	5	15	10.00	6.1	8.2
5 years, not 6.....	112	110	222	8	7	15	7.1	6.3	6.7
6 years, not 7.....	121	145	266	7	9	16	5.7	6.2	6.0
7 years to 9 (inc.)....	231	268	499	3	8	11	1.3	2.9	2.2
10 years to 14 (inc.)....	142	197	339	5	1	6	3.5	0.5	1.7
15 years, not 16.....	9	17	26	1	0	1	11.1	0.0	3.8
16 years, not 17.....	11	11	22	0	0	0	0.0	0.0	0.0
17 years to 19 (inc.)..	24	26	50	0	0	0	0.0	0.0	0.0
20 years to 24 (inc.)..	21	42	63	0	0	0	0.0	0.0	0.0
25 years to 29 (inc.)..	12	38	50	0	0	0	0.0	0.0	0.0
30 years to 34.....	9	23	32	0	0	0	0.0	0.0	0.0
35 years and over.....	14	33	47	0	1	1	0.0	3.0	2.1
Total .....	1135	1255	2393	90	71	161	7.9	5.6	6.7

On the basis of school age it was noted in addition that:

999 or 41.8% of all cases were under school age.

1,152 or 48% of all cases were of school age.

242 or 10.1% of all cases were over school age.

The percentage of deaths was 6.7, as against 7.8 last year. These figures for the percentage mortality may be far from accurate because of the varying number of missed or undiagnosed cases which are associated with a diphtheria epidemic. The mortality under one year was 41.5 per cent, and decreases steadily as the age increases. The percentage mortality was higher for males than for females. This has also been the case for the past two years.

For purposes of comparison the following table for Cleveland is presented giving the number of deaths from all causes for the last fourteen years, the number of deaths from diphtheria, the estimated populations, the percentage the deaths from diphtheria are of the total deaths, and the death rates from diphtheria per 100,000 population:



Year	Deaths from all causes	Deaths from diphtheria	Estimated population	Diphtheria per cent of all deaths	Death ratio from diphtheria per 100,000 population
1900	6104	184	395000	3.0	46.5
1901	5834	158	390000	2.7	40.5
1902	6134	210	400000	3.4	52.5
1903	6799	204	420000	3.0	48.6
1904	6476	135	430000	2.0	31.4
1905	6424	109	440000	1.7	24.8
1906	7353	166	470000	2.2	35.3
1907	7678	97	500000	1.2	19.4
1908	7177	83	515000	1.1	16.1
1909	7032	67	515000	.9	13.0
1910	8034	118	570000	1.4	20.7
1911	7967	129	580000	1.6	22.2
1912	8149	166	600000	2.0	27.7
1913	8842	230	625000	2.6	36.8
1914	82.66	161	650000	1.9	24.8
1914	8266	161	650000	1.9	24.8

It is interesting to note that the death rates from diphtheria reached the lowest figures at about the middle of the period under consideration, namely, in 1907, 1908 and 1909. The death rates have shown a tendency to increase since 1909, although they have not reached such high values as was the case previous to 1909. This increase in the death rates in recent years is very difficult to explain, in fact, no very satisfactory explanation suggests itself. Of course, it may depend upon such factors as a lack of proper control of epidemics, an increase in prevalence of this epidemic, inefficient treatment or inadequate treatment. If this state of affairs should continue for a long period of time, the question might be raised as to the efficacy of the present methods of prophylaxis and control of the disease.

The following table giving death rates from diphtheria per 100,000 inhabitants is presented so that a comparison may be made between Cleveland and some of the larger American cities:

City	1906-10	1911	1912	1913	1914
New York.....	39.0	26.0	22.0	24.8	28.0
Baltimore .....	14.5	12.1	15.8	14.1	15.7
Boston .....	26.5	18.0	14.2	21.2	23.1
St. Louis .....	19.2	16.8	18.2	26.66	33.3
Cleveland .....	20.8	22.2	27.8	36.8	24.8

#### Duration of Infection in the Respiratory Tract

The following table gives the length of time that quarantine was enforced in the various cases. As the quarantine is now

raised only after two negative cultures have been obtained, some indication will be given by this table of the length of time the diphtheria organisms remain in the respiratory passages:

#### Tabulation by Ten-Day Periods

7-10.....	125
10-20.....	968
20-30.....	426
30-40.....	146
40-50.....	48
50-60.....	14
60-70.....	8
70-80.....	4
80-90.....	3
90-100.....	3

---

1745

The parochial schools, with a total population of about 30,000, had a total of 261 cases, or an incidence of approximately .8 per cent, while the public schools, with a population of about 80,000, showed a total of 732, or approximately .9 per cent. The highest incidence among the public schools was in Rosedale, with 29 cases, and among the parochial schools in Saint James and Saint Mary, each having 22 cases.

It should be noted that the figures for the incidence in schools are inaccurate, and this is so for two reasons. In the first place, the persons reporting a case do not always give adequate information concerning the school attended, and as a result the incidence in the schools does not equal the incidence of those of school age. In the second place, it is somewhat difficult to obtain an accurate estimate of the school population for the various classes of schools and for the age group (6-16) employed in this paper.

#### Summary

Total cases .....	2383
Incidence per 100,000.....	368
Total deaths .....	161
Mortality per 100,000.....	24.8
Percentage mortality under school age.....	12.6
Percentage mortality during school age.....	2.9
Percentage mortality after school age.....	.4
Per cent of male deaths.....	56.0
Per cent of female deaths.....	44.0



Percentage mortality in males .....	7.6
Percentage mortality in females .....	5.6
Total incidence in public schools .....	732
Total incidence in parochial schools .....	261
Total incidence about those of school age.....	1152
Incidence per 1000 of those of school age.....	10

---

**Esophagobronchial Fistula.**—R. C. Beeler, Indianapolis, (*Journal A. M. A.*, Oct. 2, 1915), reports a case, in an old syphilitic patient, of fistula between the esophagus and bronchi. The patient had suffered for six months with difficulty in swallowing, ending finally in a hemorrhage of bright red blood. He was much emaciated, had a distressed look, his breathing was labored and roughened, and mostly bronchial. There were some fine moist rales throughout the chest and he had a rasping cough. On swallowing a mouthful of barium mixture, the fluoroscope showed it to go down the esophagus a short distance and then to enter and fill the bronchi. The patient coughed and expelled a considerable quantity of it, but a roentgenogram was immediately taken and showed just above the bifurcation of the tubes a barium mass, probably in dilation in the region of the fistula. The patient was then fed by the rectum for several days and a gastronomy then performed. He died, however, of pneumonia on the seventh day and no necropsy was obtained. Beeler has not been able to find a similar case in medical literature. The cause of the lesion was assumed to be syphilis.

---

**Theory and Practice.**—All advance in science comes from a combination of theory and practice, or rather, from a successful application of theory to practice. In this way what seemed to one generation the climax of theory becomes to the next generation only a very obvious practical scientific advance. There is no real opposition between correct theory and correct practice. Practice cannot dispense with theory and theory is sure to become unreal and fallacious when not reduced to practice in some way. The greatest discoverers—Galileo, Pasteur, Kelvin, Lister and practically all the great discoverers in medicine—are always theorists and men of action as well. The opposition between theory and practice is a myth, fostered largely by the bungling theorist who is unable to put his theories into practice, and by the bungling “practical men” who is unable to express the theory which underlies his practice.—*Jour. A. M. A.*

---

**Sarcoma of Rib.**—J. H. Outland and L. Clendening, Kansas City, Mo. (*Journal A. M. A.*, Oct. 2, 1915), report a case which has a bearing on the possible latency of cancer cells in the system to afterwards develop in the full-fledged disease. The patient was a man aged 36, who received an injury causing the appearance of two small tumors over the region of the ninth rib. The tumors had been present for sixteen years when the sarcoma of the rib developed beneath them. They had been diagnosed by his physicians, including the reporters of the case, as lipoma. On excision, these tumors were seen also to be sarcomas, softer, but of the same nature as the new growth, though completely encapsulated. The question may arise whether they were sarcomas from the beginning or simply the result of general sarcomatous degeneration in the new area. Those who take the opposite view will, the authors say, have to explain the fact that a sarcoma developed at the exact site of a tumor received sixteen years before.

## CERTAIN REFLECTIONS ON THE PROBLEMS OF THE WOUNDED MAN IN WAR

By DAVID MARINE, M. D., Western Reserve University, Cleveland

Any one can criticise, a few may offer helpful suggestions, but fewer still are able to observe accurately and judge fairly. I voluntarily place myself in the third group. With the time at my disposal—about two months—all of which was spent in the zone of the French armies of northern France, it is not possible to learn much of the operations of such an enormous organization as the "Service de Santé," embodying the care of millions of soldiers and civilians working under conditions of filth, congestion, stress and strain probably not hitherto equalled in war.

Broadly speaking, the medical service may be said to consist of three chief divisions, viz.: the preventive, the curative and the convalescent. These have to be organized and systematized to work in harmony for a single end with the least loss of time, of energy and of resources. Under a democratic form of government this is exceedingly difficult to effect, and especially in this true in that most democratic field of human culture—medicine. Also in the beginning of the war France was unprepared to cope with the mass invasion of the Germans. The rally since the first month has been both steady and rapid.

A general idea of the physical framework of the Army Health Department may be gained by imagining the battle front as an arc of a huge circle along the circumference of which the first aid stations are operating, with the temporary, permanent and base hospitals placed in order on the radii.

Preventative and prophylactic measures, of course, deal for the most part with the infectious diseases and everywhere these are well in hand, for one has only to enlarge and adapt those methods and measures in daily operation in any modern community to control, to the extent of our knowledge, the contagious and infectious diseases. Curative and convalescent care of conditions other than wounds do not especially concern us here. It may be added, however, that the medical care of the usual infectious diseases is excellently organized and executed.

The problem of the wounded man is quite different. At first thought it might appear simpler than medical problems, but it is indeed a complex one quite apart from the lesion—its nature, extent or location. It is essentially different from the so-called



medical cases because here one deals with well known diseases or syndromes—the prevailing treatment of which is well defined and at the finger-tips or accessible to every physician.

In the case of the wounded man one has *suddenly* to deal with an injury—the possibilities of its extent, location, local and remote effects are beyond the immediate conception of any given group of men. A practical answer to the question—what is best for the wounded man? seems to me to be the most prominent need in military medicine. We are dealing with an injury with which the surgeon may or may not be familiar. It may be of no immediate consequence as regards location or extent, and yet of the greatest importance possibly as regards complications. On the other hand, it may involve structures requiring special physiological or pathological knowledge. A quick appreciation of the injury is necessary, and an opinion must be reached as to what ought to be done, what ought not to be done, and what can be done. Often judgments differ, one thinks this treatment better, another wishes to try that—and something has to be done. Clearly then the organization and the systematization of the care of injuries is difficult, and it is equally obvious how the care of injuries and the care of diseases differ. The former can never be systematized beyond the preliminary routine, while the latter is readily organized into a smoothly-working machine alike in all countries and under all conditions.

The idea of “The Surgical Unit” as suggested by Crile is a great step toward remedying this trouble, and personally I did not fully appreciate its significance until I had visited several of the recently-established military hospitals. But it seems to me that still greater advantages to the wounded man would be realized by enlarging the “Surgical Unit” to a “Hospital Unit.” The reasons for this belief will appear later.

In trench war the problem of infection necessarily is the immediate one, first, because most of the wounds are lacerations from shrapnel or fragments of shells, and, secondly, because the trenches offer most favorable conditions for an extensive bacterial flora. The first essential, therefore, is to get the patient as quickly as possible to a first aid station, where the routine of classification, cleansing, packing, dressing and protecting the wound is carried out. Then he should be sent to a more permanent hospital, which can be and has been readily operated on the Western front at from ten to fifteen miles behind the first line

trenches because of the stationary line. The excellent roads and automobile ambulances make it possible to move patients rapidly and easily.

On the Western front the organization for this part of the work is excellent, but on account of the relatively unchanged battle line for the past twelve months, it has unfortunately made it possible for first aid stations to assume the functions of semi-permanent hospitals.

It is at the semi-permanent and permanent hospitals, with their better equipment, organization and greater assistance, that the serious study of the problems of a given wound begin. At the present time, surely the most exacting of our efficiency experts would find little to criticise up to this stage of the treatment. From this stage on, however, one sees surgical hospitals where each case is ideally studied and others where a broader appreciation of the problems would be advantageous. One sees advocates of open wounds with free drainage, of closed wounds and suction drainage, of more antiseptics, of less antiseptics, of vaccines, etc.

These are but minutiae of the great task, which is one of organization and systematization so that each patient gets the benefit of well-directed and concerted care. In this lies the greatest advantage of Crile's suggestion of "The Surgical Unit." Essentially it consists of transporting intact to the military hospital an organized staff of physicians and nurses who have been accustomed to work together in civil practice and with whom deliberation, frank and free discussion is possible without the necessity of *finesse*. This idea put into operation would work a great advance in military medicine.

So far as the strictly surgical care of the injury is concerned, a surgical unit would be sufficient. But the wound is often not the most important problem of the wounded man. The most important is that of convalescence. How can it be shortened? The so-called medical needs often outweigh the surgical needs. The question of shock anaemia, toxæmic, nutrition, diet, metabolism—all are of the greatest importance.

Starting at the time of the injury with a young, healthy, strong man, what can be done to maintain and conserve his resources to the benefit of wound healing, to the shortening of convalescence and to the economy of the State's resources? A great deal can be done, as is evident by the records of certain hospitals. They all might do something. Herein lies the value of the "Hos-



pital Unit." By this term is meant a combined surgical and medical staff, including a pathologist, a bacteriologist and a clinical microscopist who have had previous experience in working together. This is, of course, more difficult to realize than to imagine. But if only partially successful it would mean a great advance in the care of the wounded man by bringing to his aid the combined ability of a complete staff.

### Summary

The problem of the wound infection is determined more by the time interval between the injury and first aid and his reaching a permanent hospital than by the method of treatment used. In trench war, with the automobile, good roads and an excellently organized ambulance corps, this service has attained a high degree of perfection. At the semi-permanent and permanent hospitals there is room for much improvement in the organization and study and execution of the various phases of the care and convalescence of the wounded man.

The idea of Crile of the "Surgical Unit" would mark a great advance, and to enlarge this to a "Hospital Unit" would mean a still greater advance for the welfare of the patient. The object being to obtain more study and a broader and more balanced appreciation of the conditions to be met than can possibly be done by a staff of surgeons alone, especially if unaccustomed to team work.

**Radium as a Fertilizer.**—"Discoveries, so long as they are novel, naturally excite expectant optimism as to their application. This is the stage at which honest but indiscriminating enthusiasm and deliberate fakery both flourish. Radium, the possibilities and limitations of which are still undefined, is an instance in point. Time and experience are needed to reduce to rational limits the many claims made for it.

"One of the uses suggested for radium is the stimulation of plant growth. Various experimenters have investigated the effect of radium emanation on the growth of plants under laboratory conditions. Gager, Fabre and Stocklasa have each reported stimulation of the growth of plants or the germinating activity of seeds under the influence of an optimum strength of radium, while a greater strength retarded growth.

"The results of these laboratory experiments aroused interest in the possibility of using radium as a soil fertilizer under practical agricultural conditions." *The Journal of the American Medical Association*, after these statements, quotes two sets of experimental studies of the subject, which reached opposing conclusions. "It may be," says *The Journal*, "that eventually some means will be found by which radium can be utilized in practical agriculture. At present, however, the best evidence we have does not encourage us to regard this as an immediate possibility."

**Assistant in Metabolism Investigations**—The United States Civil Service Commission announces an open competitive examination for assistant in metabolism investigations, for men only, on December 8, 1915, at the places mentioned in the list printed hereon. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the United States Public Health Service for duty in the field at a salary of \$1,500 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

The duties of this position will be to make complete food analyses, including Calorimetric determinations. Appointees will also be required to use the respiration apparatus for the determination of the energy metabolism.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects	Weights
1. General chemistry .....	25
2. Calorimetric and respiration determinations.....	40
3. Education and Experience.....	35
Total .....	100

Graduation from a four years' course at a college, university, or medical school of recognized standing and at least six months' practical experience in work with the respiration apparatus and the calorimeter are prerequisites for consideration for this position.

Statements as to education and experience are accepted subject to verification.

Applicants must not have reached their forty-fifth birthday on the date of the examination.

Applicants must submit to the examiner on the day of the examination their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Tintypes or proofs will not be accepted.

This examination is open to all men who are citizens of the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply for Form 1312, stating the title of the examination for which the form is desired, to the United States Civil Service Commission, Washington, D. C., or to the Secretary of the United States Civil Service Board at any place mentioned in the list printed hereon. Applications should be properly executed, excluding the medical and county officer's certificates, and filed with the Commission at Washington in time to arrange for the examination at the place selected by the applicant. The exact title of the examination as given at the head of this announcement should be stated in the application form.

---

**Poliomyelitis.**—G. B. Hassin, Christine Lukas and R. O. Brown, Chicago (*Journal A. M. A.*, Oct. 23, 1915), report a case of a patient in a county asylum with atrophy of the lower limbs which is described in detail, which they attribute to an old poliomyelitis causing a flaccid paraplegia combined with a paralytic lordosis, secondary contractures in the knee joints and some signs of degeneration. The paralysis and atrophies are perfectly symmetrical in character as shown by the roentgenograms. The patient's mental condition is that of dementia praecox.



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902.

Capital Stock, \$6,000

---

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH F. STONE  
2318 PROSPECT AVENUE

ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.  
ROGER G. PERKINS, M. D.

JOHN PHILLIPS, M. B.  
T. WINGATE TODD, F. R. C. S.

COLLABORATORS

C. E. FORD, M. D.  
H. E. HANDERSON, M. D.  
S. W. KELLY, M. D.  
J. J. R. MACLEOD, M. D.

DAVID MARINE, M. D.  
V. C. ROWLAND, M. D.  
H. L. SANFORD, M. D.  
TORALD SOLLMANN, M. D.

G. N. STEWART, M. D.

---

EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.  
*Vice-President*, C. E. BRIGGS, M. D.

*Secretary*, C. A. HAMANN, M. D.  
*Treasurer*, H. G. SHERMAN, M. D.

---

BOARD OF DIRECTORS

C. E. BRIGGS, M. D.  
F. E. BUNTS, M. D.  
G. W. CRILE, M. D.

C. A. HAMANN, M. D.  
C. F. HOOVER, M. D.  
S. H. LARGE, M. D.  
J. B. MCGEE, M. D.

J. P. SAWYER, M. D.  
H. G. SHERMAN, M. D.  
W. H. WEIR, M. D.

---

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

---

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

---

## EDITORIAL

### INTRAVENOUS EXPLOITATION

We are accustomed to see commercial enterprise exploit every popular discovery, fad or fashion. The intravenous injection of salvarsan, offering at once two striking "novelties," was therefore an especially attractive field for exploitation by all sorts of quacks. Naturally, every advertiser claimed "improve-

ments" over the original—often consisting in the silent substitution of a cheaper arsenical. These cruder forms of exploitation may be left to the safe, if somewhat slow, operation of the penal laws.

There are, however, more refined but equally harmful forms of exploitation, which cannot be reached by the statutes, but only by the profession itself, or rather by the individual physicians. An instance of this is the recent active campaign of the "Intravenous Products Company," exploiting intravenous medication in general, and a salvarsan substitute, "Venarsen," in particular. Two of their products, Venarsen and Venodin, were examined—and rejected—by the Council on Pharmacy and Chemistry, of the American Medical Association. Any physician who has been impressed or tempted by the advertising of these products should at least read these Council reports in the *Journal of the A. M. A.*, Vol. 64, 1915, No. 21, p. 1780, and No. 26, p. 2155.

In brief, these reports point out the following facts:

(1) That intravenous injection constitutes "heroic" medication, which should not be undertaken lightly. This not so much because of the slight surgical risk, but because it introduces the medicaments so abruptly and in so concentrated a form, that serious results may ensue. Any one who has watched the blood-pressure during intravenous injections, f. i., in animals, must have been struck by the immediate disturbances and the abrupt and usually brief action; the "kick," as it is picturesquely described in the advertising pamphlet "Direct Medication," of the Intravenous Products Company. It should never be forgotten that this "kick" is delivered to the patient, as well as to the "disease."

(2) That, therefore, intravenous injections should only be employed when they have distinct advantage over other methods of administration; for instance, when an abrupt action is especially desired, as with emergency administration of strophanthin; when the drug would be destroyed in the stomach, as with salvarsan; and when it is not readily absorbed from subcutaneous or muscular injections, as with this drug or epinephrin.

(3) That, on the other hand, intravenous medication is unsuitable when a continuous action is required, as in the use of iodids, iron, salicylates, etc.

(4) That the practicing physician, when employing intravenous medication, should aim to confine himself to simple



drugs, whose actions are well known; and that he should abstain from complicating his problems and responsibilities by the use of complex mixtures of unknown ingredients such as those of the Intravenous Products Company. These often contain several active and toxic ingredients, of unknown nature, and are, apparently intentionally, enveloped with a veil of mystification. Venarsen, for instance, is defined in their pamphlet as "a comparatively non-toxic organic arsenic compound, 5 c.c. of the solution representing 0.7 Gm. of organic arsenic (288 Mg., or 4.37 gr. of metallic arsenic) and 0.78 Mg. (3-250 Gr.) metallic mercury in combination, and is so prepared and enhanced as to present the ingredients to the blood in their most acceptable form," page 21; and,

"Venarsen combines arsenic and mercury in proportions suitable for the entire treatment of syphilis," page 28.

As a matter of fact, it consists of a large dose (9 grains) of sodium cacodylate with a "dash" (1/40 grain) of mercuric iodide. Similarly, Venodine is defined as "a sterile solution representing 1.54 Gm. (24 gr.) of iodine in chemical combination with creosote and guaiacol," page 46.

No one could guess from this that its essential ingredient is nothing more or less than sodium iodide, tinctured with creosote and guaiacol.

The physician, if he uses these products, should be informed of their real composition without having to refer back to the reports of the Council.

(5) That whilst the sodium cacodylate contained in Venarsen was known to be relatively non-toxic, and had been credited with antiluetic properties, the available evidence indicates inferiority to salvarsan or mercury.

It may be fairly assumed that in their pamphlet the Intravenous Products Company have made out the best possible case for Venarsen as a substitute for Salvarsan. A critical examination of even this evidence fails to establish their case.

As to the harmlessness of the mixture, it is stated:

"Venarsen seems to be free from any disagreeable reactions," page 22.

However, the writer qualifies this immediately:

"The usual precautions should be observed by frequent examinations of the urine for albumen, and also for other symptoms of intolerance," page 22.

This can only mean that toxic symptoms have actually been observed. Whether these are indeed less frequent than with other arsenicals could only be decided by statistical evidence—on which the pamphlet is silent.

As to efficiency, the claims are equally positive, and the evidence equally unsatisfactory. It is stated:

“One point to be emphasized is that this product (Venarsen) is giving results equal to or greater than similar arsenical products, and surely more gratifying results than the older methods of treatment and administration,” page 28.

This is presumably based on the abstracts of reports “gleaned from experiences of the most progressive men, as well as some of the largest consumers of our products,” page 28.

It may fairly be presumed that these abstracts have not been chosen with a view to proving the inefficiency of Venarsen. That, however, is their tendency when judged by the statement,

“Venarsen should give a negative blood test in from *six* to *eight* doses, given at intervals of *four* to *six* days,” page 22.

The table looks quite impressive—until one examines it closely, when the following facts come to light:

In the 14 cases of syphilis reported on pages 26 and 27 of this pamphlet, the records are very incomplete and unscientific. In 9 of the cases the Cobra Venom Test has been used as proof, though it is now known to be worthless; and in 9 likewise the Noguchi Reaction has been depended upon, though it has been discarded by Doctor Noguchi himself.

As to the results of the treatments: in case No. 7, mucus patches remained in the mouth after 6 injections of the drug; and in No. 10, a chancre, the disease, instead of retrogressing, progressed, as there were mucus patches after 7 injections given exactly as the company advise. In case No. 12, even after 12 injections severe mucus patches remained, which cleared up, according to their data, after the use of mercury rubs. From the other cases no conclusions can be drawn from the incomplete data furnished.

In brief, the table does not give really reliable evidence of improvement in any case; the criteria that have been used being now considered inadequate. On the other hand, the treatment was clinically inefficient in 3 of the 14 cases. The company tries to get around this (page 29) by a convenient theory, that patches persist even when the spirochetes have been destroyed. How-



ever comforting such a theory may be for them, it becomes somewhat fantastic when it is remembered that mucus patches do disappear under salvarsan or mercury.

Although this editorial is of unusual length, we do not feel that we need to apologize for it. Luetics have the right to be treated by the best possible methods; and the best that can be said for Venarsen is, that it appears to be far inferior to either salvarsan or modern mercurial treatment. We also feel that any patient subjecting himself to intravenous medication is entitled to expect that his physician knows at least what he is administering, and why he administers it.

---

## THE DRUGGIST VERSUS THE DRUGLESS HEALER

In this day and age of osteopathy, of chiropractic, of naprapathy, etc., etc., *at nauseum*, we have still another practitioner among us and unfortunately this healer is not of recent origin. We refer to our friend with the variegated store on the corner. His window is full of showy signs and brightly colored bottles. There is the picture of the tottering man who has lost his "manhood." N. B.—Take the great Doctor Soakem's "Manhood Restorer." We see also the poor woman coughing her life away: P. S.—The "Old Doctor Getem's Sure Cure for Consumption" in all stages is highly touted. And so we might go through the entire gamut of human ills—for all of which the druggist has his sure cures. From the babe in the cradle to the old man about to be laid in his grave, the druggist is there to get him, and if it can't be done with "Plant Juice," why then he will use something else. However, it is not only with patent medicine that the druggist deals, and this is much more serious—we refer to the druggist as a dispenser. How many physicians have had patients come to him after they have been treating with a druggist for weeks and even months—perhaps some of the medicaments were patents, but all too many are official preparations that the druggist recommended for the complaints given. Let us give a few concrete examples. We have lately seen several basal cell carcinomata of the face which the druggist had been treating—in one instance for several months. Again, the practice has become very prevalent among druggists of dispensing calomel powder to every customer coming in and complaining of a chancre of the penis. This pernicious practice is working irreparable harm and the Academy of Medicine should

look into it at once. Once Calomel has been used locally all chance of an early, microscopical diagnosis is taken away and the physician, with his anxious patient, must then remain in doubt from one to four or five weeks until the Wassermann or other diagnostic methods will settle the diagnosis—the patient in the meantime losing all this valuable time in beginning treatment of his syphilis. At the Dermatology Clinic at the Lakeside Hospital we see on an average from three or four to five or six chancres, specific and nonspecific, a week. Yet in the past year we have been able in only a very few instances to make an early microscopical diagnosis because of the fact that to practically each and every man this drug had been doled out by a druggist. Very fortunately, not all drug stores are in the category mentioned, but are a credit to the profession, and such stores all high-minded physicians should encourage and patronize. The Academy of Medicine can also be of great service, especially in an official capacity, through the lay press, and it will be a glorious day when we can send our prescriptions to *apothecaries* (not soda fountains), where drugs are dispensed *only* on a physician's order, and where the "Patent Medicine" is a thing of the past.

H. N. C.

---

**Stone in the Kidney.**—A careful study of 157 cases of renal and ureteral calculus is published by H. Cabot, Boston (*Journal A. M. A.*, Oct. 9, 1915). With regard to the age incidence, it appears that the greatest number of patients come to operation between the ages of 20 and 40, but the onset of symptoms undoubtedly occurs at a much earlier period. Many cases begin between 10 and 20, and the largest number between 20 and 30. In his series the men predominated, 108 to 46 women, which does not agree with some other figures. In the women the right side was more frequently involved, and the left side in men. The frequency of involvement of the right side in women has been commonly explained by the more frequent occurrence of mobility of the right kidney. Colicky pain occurred in 96 patients at some time, but was the presenting symptom in only 50; in the remaining cases dull pains variously distributed and hematuria, chills and fever, and vomiting, were the rule. In 150 cases there was albumin in 111, blood, either microscopic or macroscopic, in 103, and pus in 109. Six per cent gave negative roentgenograms, but he considers this will be the case in from 10 to 15 per cent of all cases. There were 140 operations with five deaths, pyelotomy being at present the operation of choice. From the total study, in which he sums up practically the above, he concludes that urine and the Roentgen ray are unsafe guides for operation, but unusual pain, together with a negative Roentgenogram and a persistently normal urine is fortunately rare. He believes that unnecessary abdominal operation done through failure to detect ureteral or kidney stone is too large to be credited to the medical profession, even at present.



## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. McGee, M. D., Cleveland

**Raynaud's Disease:** Oliver T. Osborne in the August number of the *American Journal of the Medical Sciences*, writes concerning Raynaud's syndrome, or Raynaud's disease. The disease or condition was first termed "local asphyxia and syncope;" it has also been termed "symmetrical gangrene." The latter name is a misnomer, as the local manifestations are as frequently unilateral as symmetrical. Raynaud's belief that the local symptoms were caused by a spasm of the capillary vessels, which shut off the circulation more or less permanently from a part, is correct. Pathological investigations have shown there is no primary disease of the walls of the vessels. Raynaud's syndrome occurs mostly in women, and will be found associated with disturbances that are well recognized as due to disturbances of the thyroid gland. It is also frequently associated with disturbances of the menstrual function. It can occur at any age, and has even been noted in young children. His conclusions are: 1—Raynaud's disease is not a distinct entity; it is a syndrome caused by the disturbance of one or more internal secreting glands.

2—There is primarily no real disease of the blood vessels, but the vasomotor control is so abnormally disturbed that most profound contraction of certain blood vessels may occur in different parts of the body, perhaps more or less coincident with abnormal dilatation of other blood vessels. If the contracted blood vessels are peripheral, the parts more or less lose their function and show various trophic disturbances.

3. This blood vessel spasm may occur in the internal organs of the body as well as peripherally, though much less frequently, and more difficult of diagnosis.

4—The syndrome is probably due to disturbances of more than one of the ductless glands of the body that have internal secretion, but there is always apparently some disturbance of the thyroid gland, perhaps a diminution of the vasodilator stuff of this gland.

5—Judiciously applied, thyroid treatment improves the majority of cases. Nitroglycerin is always of temporary benefit, and local heat is always of immediate benefit.

---

**Drug Action:** Thomas J. Mays, in the *New York Medical Journal* for August 14th, presents a study of drug action. In these days of drugless therapy there exists a manifest impulse to get rid of the so-called useless members of our *materia medica*. There can be no objection to such a procedure if it is carried out properly, but in the haste in which this is sought to be accomplished, drug agents are frequently victimized on grounds so trivial that would barely receive a moment's serious consideration from any impartial scientific tribunal. Preventive medicine has done much and will do much more, but the complete eradication of disease is a problem for the far distant future, and is largely an impossibility so long as the mental and physical imperfections of man endure. There also exists an unreasonable degree of impatience with and a tendency to expect too much from drug action. What then are some of the fundamental factors in drug action? First, the effect of a drug is proportionate to the quantity that is administered, and every drug produces at least two effects, in minimum and maximum doses, which differ not only in degree but in kind. Small doses of pilocarpine check, while large doses produce sweatings; small doses of apomorphine stop vomiting, while large doses cause it; small doses of strychnine stimulate the motor nervous system, medium doses cause convulsions, while very large doses produce paralysis; and the same difference is probably characteristic of all drugs. Second, the action of a large number of drugs is intimately dependent on their molecular weight, and boiling or melting point. Thus it appears that substances with the highest molecular weight boiling or melting point, like mercury, iodoform, bismuth, benzoic acid, menthol,

eucalyptol, etc., are known to have the highest antiseptic power. In other words, the greater the molecular weight, and the higher the boiling point of a therapeutic agent, the more physical inertness it possesses, and the more pronounced is its antiseptic property. Third, the elective action of drugs constitutes another important element in the field of therapeutics. Many of the articles of the materia medica have a natural preferential affinity for certain structures of the body. Fourth, the appropriate dose is a more or less variable quantity, and cannot be so closely determined that it will always produce exactly the same effect in different individuals or even in the same individual at different times, or under different circumstances, but this is not an insurmountable obstacle to gauging the therapeutic effect accurately enough to fulfill all useful and practical purposes. We must give up the oppressively current opinion that each and every drug possesses a single hidebound dose. Fifth—Treatment should not be addressed so much to the patient as against the disease. Sixth—Too little interest is taken in the proper mental training of medical students in the study of drug action. They should not only be taught the general and special behavior of drugs, but be impressed with the idea that it is of infinitely greater consequence to form a conception of the status and cause of the disease, from the beginning to its end, than be able to recognize its effects in the autopsy.

---

**Digitalis Dosage:** In the development of the various branches of medicine the department of therapeutics has proceeded more slowly than most of the others, especially in the matter of drug treatment. The activity of the laboratory has added a few valuable remedies to our armamentarium, but much of the research on this subject has tended rather to disprove the value of many drugs both old and new. The *Medical Record* thus states editorially in its issue of August 21st and continues that the number of really invaluable drugs is certainly very small, but it includes digitalis. This drug has been studied at length by many investigators, and its mode of action has been fairly definitely established. Of its dosage, less is satisfactorily known. Different samples of the leaf, and different preparations, vary enormously in their potency, and much effort has been devoted to the problem of finding a means of standardization. Of the standards proposed, the "cat unit" of Hatcher is becoming accepted as the most reliable for translation into dosage for man. The cat unit, it may be explained, is "that amount of the drug which is just sufficient to kill one kilogram of cat, when slowly and continuously injected into the vein." "This is expressed in terms of milligrams of the drug, whether it be a pure principle or the leaf." The chief drawbacks of digitalis therapy have been, first, that it developed its action rather slowly, and, second, that the stomach not infrequently became intolerant to the drug before the desired therapeutic result could be obtained. Eggleston proposes the following method of administration, which he claims will largely overcome these disadvantages: The dose for the patient is estimated on the basis of one-seventh of a cubic centimeter of a high grade tincture for each pound of the body weight. In estimating this dose it is necessary to estimate and disregard the proportion of the patient's weight, which is due to edema, as well as that due to fat in the very obese. One-third to one-half of this dose is given at once, and followed in four to six hours by one-quarter to one-third the dose. The remainder is to be given in smaller amounts at intervals of from four to six hours. If, after the total dose has been given, the patient fails to show the full therapeutic effect, administration of small amounts should be continued until such effect appears. Eggleston says that the large amounts of digitalis given early do not cause gastric irritation, since he has given from 5 to 15 c.c. repeatedly, and has never seen the least disturbance as a result. Indeed, when it is realized that the vomiting of digitalis is a result of its central action, it will seem probable that large amounts may be given in this way, before the onset of nausea. It is, of course, understood that this method is for cases of acute cardiac decom-



pensation and is not designed to supplant the so-called chronic digitalis therapy, which is followed in the less urgent cases. He states that digitalis and digitoxin are probably rapidly absorbed and fairly uniformly from the alimentary canal of man, but digitalis is less completely absorbed than digitoxin. Strophanthus, strophanthin, ouabain and true digitalin, on the other hand, are poorly and irregularly absorbed when given by mouth, and are unsuited for therapeutic use in this way. Eggleston's paper is published in the *Archives, Int. Med.*, XVI, 1.

**Burns.** Henry Richmond Slack, in the September number of the *Medical World*, writes as to a new treatment for burns. He states that in reviewing surgical literature one is impressed with the fact that while wonderful advance has been made, the treatment of burns is practically where it was decades ago. He has been using an agent for twenty years in the treatment of burns which is simple and efficient and now asserts that the application of tincture of ferric chloride is the best treatment for burns. He explains its action by stating that the tincture is an alcoholic solution of  $Fe_2Cl_6$ . We know that ethyl alcohol is one of the best antiseptics, and ferric chloride one of the most powerful astringents. The alcohol renders the wound aseptic, and the ferric chlorid toughens the skin and makes a dry scarf epidermis in burns of the first and second degrees, and a dry impervious coat of iron on those of the third degree. If the burn is extensive he gives at least twice the usual dose of morphin hypodermically. He paints the entire surface over with ferric chloride several times with a cotton applicator or camel's hair pencil, being careful not to break the blisters in second degree burns, nor to remove the charred surface in third degree. He then applies dry gauze dressing. The first impression is of increased pain, but continue the application and it soon ceases. Whenever it becomes severe reapply the tincture. He claims these advantages for the treatment: 1st. It relieves the pain more promptly than any other form of dressing. 2nd. It forms a dry surface to which dressings do not stick. 3rd. It prevents infection, and therefore the formation of pus. 4th. Burns heal more quickly, and there is less scar tissue. 5th. It is inexpensive and easily applied.

**Strychnine:** The *Therapeutic Gazette* for August comments editorially on the value of strychnine in broken cardiac compensation. There are few drugs which are so generally employed by the profession by the mouth or hypodermic needle as is strychnine, which is another way of expressing the fact that a large number of physicians believe that it has rendered them excellent service. When the vast body of the profession reaches such a belief, it is difficult to accept the statement of any one individual, or of several individuals, that good results are not in reality produced by this drug when it is properly used. In the May number of the *American Journal of the Medical Sciences*, Newburgh, of Boston, basing his conclusions on eight cases of ruptured compensation, as to the influence produced by strychnine, concludes that neither pharmacological nor clinical evidence justifies the use of strychnine in the treatment of acute or chronic heart failure. The editorial continues that it is not the intention to deny with equal positiveness the correctness of Newburgh's conclusions, but it is the intention to criticize and condemn sweeping and absolute statements of this character, which controvert general professional opinion, which represent the views of only one man, and which are based upon the study of only eight cases, particularly when most, if not all, of these cases were in a condition in which it is questionable whether any drug could produce definite favorable results at the time it was used. It is a fair statement that physicians in general do not use strychnine as a remedy in ruptured cardiac compensation; they employ it rather for the purpose of combating evidences of sudden circulatory failure, and improvement often occurs. Whether this results from stimulation of the heart or of the vasomotor center, or whether it results from stimulation of the nervous system, which in turn acts favorably upon the

circulatory apparatus, is probably as yet undecided. The editor is convinced that there is far too little research along these lines; that many of the remedies daily employed by physicians are given of necessity in the majority of instances on a purely empirical basis; but a warning ought to be issued against sweeping statements based upon a very few cases presenting conditions which prevented a drug when given hypodermically from being absorbed, and accompanied by little or no information as to whether there were albumin and casts in the urine. A man might just as well conclude that there was adequate evidence that there is no God after having conversed with eight atheists, as to conclude that strychnine is of no avail after having used it in eight hopeless cases, particularly when millions of people believe that there is a God, and thousands of physicians believe strychnine aids them in saving life, in the face of undoubted sudden cardiac failure.

---

**Rheumatism:** In *American Medicine* for June, F. J. Poynton formulates a series of directions as to rheumatism. These suggestions may be given to parents of rheumatic children, and are:

(1) The great danger of rheumatism in childhood is the damage to the heart, not to the joints. (2) Though called acute rheumatism or "rheumatic fever," this disease often commences without severe illness, but with pains in the limbs, frequently termed "growing pains," or with a stiff neck. (3) Children whose hearts are attacked by rheumatism need not have severe pain in the heart; slight breathlessness of palpitation may be the only symptoms. (4) A child who has rheumatism should always have the heart examined by a doctor. (5) Rheumatism runs strongly in families. (6) A sore throat may remove the commencement of an attack of rheumatism. (7) Chorea or St. Vitus's dance is generally rheumatic; nervousness, dropping things, headaches, and jerky movements are early signs of the illness. (8) Rheumatic children need warm clothing and good boots. The extremities should be protected. (9) Damp houses and rooms, wet clothing and damp neighborhoods are particularly injurious to the rheumatic. (10) Children with rheumatic heart disease need a long time for convalescence because the heart is softened by the disease, and requires to get strong again before the child can run about in the usual manner. (11) Rheumatism often attacks children more than once. Late autumn and early spring are times of danger.

---

**Cardiac Arrhythmia.**—P. D. White, Boston (*Journal A. M. A.*, Oct. 9, 1915), gives an account of a case of gross arrhythmia, due not to auricular fibrillation or sinus arrhythmia, but to an unusual combination of ectopic ventricular contractions arising from at least three different points in the ventricles, with now and then an aberrant beat of supraventricular origin slipping in, as shown by the charts and cardiograms. At other times there occurred a bigeminy due to ventricular premature beats alternating with the beats of supraventricular origin. Rarely a short run of beats of normal rhythm occurred and on such occasions pulsus alternans was found to be present. Electrocardiograms showed the existence of defective conduction in the right branch at the atrioventricular bundle.

---

**Traumatic Emphysema.**—A case of orbitopalpebral emphysema caused by perforation of a dental canal is reported by Aaron Bray, Philadelphia (*Journal A. M. A.*, Oct. 9, 1915). Ordinarily this not very common condition is a result of the fracture of the nasal lacrimal or ethmoidal bones, but it may occasionally occur from the cause reported. The diagnosis is comparatively easy. There is sudden swelling of the lid and adjacent tissues with no signs of inflammation. The swelling does not pit on pressure and there is no exophthalmos. Usually the face is involved in addition to the lids, but as the textbooks do not describe the condition, he puts the case on record. The treatment is simple. The emphysema disappeared in a week after a pressure bandage had been applied for two days.



## NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies."

**Pantopon (Pantopium hydrochloricum).**—A mixture of the hydrochlorides of the alkaloids of opium, containing 50 per cent of anhydrous morphine hydrochloride. It produces essentially the effects of opium, but, being devoid of opium extractives, may be used for hypodermic administration. It is probably absorbed more promptly and is free from the nauseant odor and taste of ordinary opium preparations. Pantopon (pantopium hydrochloricum) is also supplied as Pantopon (pantopium hydrochloricum) tablets 0.01 Gm., Pantopon (pantopium hydrochloricum) hypodermic tablets 0.02 Gm., and Pantopon (pantopium hydrochloricum) ampules 0.02 Gm. The Hoffman-LaRoche Chemical Works, New York City (*Jour. A. M. A.*, Sept. 4, 1915, p. 877).

**Larosan, Roche.**—Calcium caseinate, containing calcium equivalent to 2.5 per cent calcium oxide. In the treatment of diarrheas of infants a useful food is that made from the curd of milk and diluted buttermilk. The preparation of such a mixture of proper composition being difficult to prepare in a private home, Larosan, Roche is offered as a substitute. The Hoffmann-LaRoche Chemical Works, New York City (*Jour. A. M. A.*, Sept. 4, 1915, p. 877).

**Betanaphthol Benzoate-Merk.**—A non-proprietary preparation of betanaphthol benzoate (see New and Nonofficial Remedies, 1915, p. 210). Merck & Co., New York (*Jour. A. M. A.*, Sept. 4, 1915, p. 877).

**Desiccated Pineal Gland, Armour.**—The pineal gland of normal cattle, freed from connective and other tissues, dried and powdered. There is some evidence that there is a relation between the pineal gland and some processes of development and growth. The therapeutic use of the gland is in the experimental stage. Pineal gland, Armour, is also supplied as Pineal Gland Tablets, Armour, 1/20 gr. Armour & Company, Chicago (*Jour. A. M. A.*, Sept. 25, 1915, p. 1111).

**Scopolamine Stable, Roche.**—An aqueous solution of pure scopolamine hydrobromide protected against decomposition by the addition of 10 per cent of mannite. It has the properties of scopolamine hydrobromide, U. S. P. It is supplied in ampules, each containing 1.2 cc. (L cc. contains 0.0003 Gm. scopolamine hydrobromide). The Hoffmann-LaRoche Chemical Works, New York (*Jour. A. M. A.*, Sept. 25, p. 1111).

**Coagulen, Ciba.**—An extract said to be prepared from blood platelets and to contain thromboplastic substance mixed with lactose, 1 Gm. representing 20 Gm. dried blood. It is said to act as a hemostatic and to be useful in the treatment of local and certain internal hemorrhages. Solutions of Coagulen, Ciba, are used locally, intramuscularly and intravenously. A. Klipstein & Co., New York (*Jour. A. M. A.*, Sept. 25, 1915, p. 1111).

**Calol Liquid Petrolatum, Heavy.**—A non-proprietary brand of liquid petrolatum, U. S. P., said to be derived from California petroleum and to consist essentially of hydrocarbons of the naphthene series. It is colorless, non-fluorescent and practically odorless and tasteless. Its specific gravity is 0.886 to 0.892 at 15 C. Standard Oil Company of California, San Francisco, Cal. (*Jour. A. M. A.*, Sept. 25, 1915, p. 1111).

**Tetanus Antitoxin for Human Use.**—Marketed in syringes containing 1,500, 3,000 and 5,000 units each. Cutter Laboratory, Berkeley, Cal.

**Diphtheria Antitoxin, Globulin.**—Marketed in syringes containing 2,000, 3,000, 4,000, 5,000 and 10,000 units each. Cutter Laboratory, Berkeley, Cal.

**Anti-Pneumococcic Serum.**—Marketed in syringes containing 10 cc. Cutter Laboratory, Berkeley, Cal.

**Normal Serum (from the Horse).**—Marketed in syringes containing 10 cc. Cutter Laboratory, Berkeley, Cal. (*Jour. A. M. A.*, Sept. 25, 1915, p. 1111).

During August the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Armour & co.:

Pineal Gland Desiccated.

Hoffmann-LaRoche Chemical Works:

Scopolamine Stable Roche.

Laroson, Roche.

Pantopon (Pantopium hydrochloride).

A. Klipstein & Co.:

Coagulen, Ciba.

White Chemical Co.:

The Council has recognized the White Chemical Company as selling agent for Apinol. The Council is assured that this preparation will be marketed in accordance with its rules.

During September the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Cutter Laboratory:

Anti-Pneumococcic Serum: Syringes 10 cc.

Diphtheria Antitoxin Serum: Syringes 2,000, 3,000, 4,000, 5,000 and 10,000 units each.

Normal Serum (from the Horse): Syringes 10 c.c.

Tetanus Antitoxin: Syringes 10 cc.

Hoffman-LaRoche Chemical Works:

Imido, Roche: Ampules Imido Roche.

H. K. Mulford Co.:

Mercurialized Serum, Mulford: Mercurialized Serum Nos. 1, 2, 3, 4, 5, 6.

Schieffelin & Co.:

Radiorem: Outfit No. 4.

Standard Oil Co. of California:

Calol Liquid Petrolatum, Heavy.

Morgenstern & Co.:

The Council has recognized Morgenstern & Co. as selling agent for Dolomol and the Dolomol preparations in New and Nonofficial Remedies. The Council is assured that these preparations will be marketed in accordance with its rules.

---



## The Academy of Medicine of Cleveland

### ACADEMY MEETING

The one hundred and twenty-third regular meeting of the Academy of Medicine was held Friday, October 15, 1915, at the Cleveland Medical Library, the President, Doctor C. F. Hoover, in the chair.

The minutes of the last meeting were read and approved.

The minutes of the Council meeting of October 13 were read and approved.

Doctor Alvin S. Storey read a communication from the Aetna Life Insurance Company suggesting that physicians report promptly all particulars of any case which might cause trouble, in order that the company may advise them as to any particulars or details which should be made clear.

On motion the following were elected members of the Nominating Committee: Doctors G. W. Moorehouse, Chairman, J. C. Plcaak, A. W. Lueke, S. W. Kelley, J. G. Spenser.

The proposed amendments to Chapter II, Sec. 1, and Chapter IV, Sec. 1, of the By-Laws were read:

Amend Chapter II, Sec. 1, of the By-Laws (page 8) by striking out the words "must be accompanied by the initiation fee of two dollars (\$2), and."

Amend Chapter IV, Sec. 1, of the By-Laws (page 10) by striking out the words "and must accompany the application for membership."

The Chair then entertained a motion to adopt as read. Carried.

The proposed amendment to Chapter IV, Sec. 2, of the By-Laws was read:

Amend Chapter IV, Sec. 2, of the By-Laws (page 10) by striking out the words "five dollars (\$5)" and inserting in lieu thereof the words ten dollars (\$10)."

The Chair then entertained a motion to adopt, which was seconded. After discussion and interrogations from the floor, a vote of the ayes and noes was called for. The Chair was undecided. A rising vote was called for. Motion carried, 40 to 9.

The Chair then proceeded to the program of the evening.

### Program

**Leonardo and Vesalius (Holl-Roth Controversy).—A Disputation by Arnold C. Klebs and Fielding H. Garrison, Director of Surgeon-General's Library.**

Both Doctor Klebs and Doctor Garrison have been making a special study of these two great characters during the past year, presented some of their ideas in the form of an old-fashioned debate, illustrated with numerous lantern slides bearing on the work of these two men.

Fielding H. Garrison, in introducing the subject for discussion, said that it concerned the authenticity of the anatomical drawings of Vesalius; the question having arisen out of the Holl-Roth Controversy over the volumes, which first coming into the possession of Charles I of England, have at last found a resting place in the library at Windsor, England.

Arnold C. Klebs said that the work of Vesalius is concrete and systematic and that it readily yields to analysis, whereas Leonardo's work is so diverse and so varied that it defies all attempts toward this end. Like his famous Mona Lisa, whose sphinx-like expression of countenance has charmed and baffled the thoughts of men for ages, so Leonardo, too, presents to us who would strive to comprehend him a spiritual enigma equally as confusing and as impenetrable.

Leonardo was born in 1452 and died just five years after the birth of Vesalius, in 1514. Fourteen years after the death of Leonardo, Vesalius, then a young man of 19 years, made the avowal and committed it to writing that he would devote all of his strength and his energies to the advancement and study of the science of anatomy. No such an avowal has been recorded of Leonardo. His interests and his activities were too

varied to allow his absorption into one single line of work. While anatomy was to him only one of his many interests, yet we know that he had a deep and an abiding interest in the subject and that he was the first to attempt a scientific description of the human body. All of this is attested to by the many references among his notes concerning anatomy—queries into the how and the why of the many parts of the human body, speculations as to the function of the organs and mechanical diagrams attempting to show the action of the muscles upon the joints. It may be that he intended to write a complete anatomy, for we find in one place where in 1510 he wrote that he believed that he could send off the whole anatomy for publication. However, this was never done, and a little later he complains of lack of time to accomplish the task. And it is quite probable that the task was never completed, since he remarks in another place that he has left the anatomy of the foot for a later time.

It has been claimed that Leonardo worked with a physician, Mark Antonio, and that he had simply seen some dissections worked out by the latter. This can hardly be believed, for Leonardo was thirty years the senior of Mark Antonio, and the latter died at a very early age. Moreover, Leonardo's notes contain no reference to the physician. From this it seems certain that Leonardo began his study of anatomy independently of anyone.

The remains of his work consist of some thirty loose sheets. There can be no doubt that there were many more which were lost, for the uncompleted anatomy was circulated about among his friends and among strangers after his death, and doubtless each one appropriated what he liked for himself. Regardless of the small number that are left, they serve to show how wonderful and how original was his work. They show, too, that his drawings must have been made from actual observation of the dissected subject and that they were not drawn from the imagination or from memory, as were many of the works before, and, indeed, during and even following his time.

It is certain that for some years preceding 1515 there was plenty of anatomical material. Walsh, in America, has called attention to the fact that with the awakening of interest in art following upon the discovery of the ancient marbles, there was about this time a great impetus given to the study of anatomy; this study being taken up largely by the artists for the purpose of giving them a better conception of the human form in action or in repose. The leader of this great movement was Leonardo himself, and it was he that urged upon all artists the necessity of a thorough study of anatomy in order to gain a proper conception of the human form.

To mention briefly some of his achievements in anatomy: he had the proper conception of gross anatomy—of the muscles, the bones, particularly of the skull and the pelvis; his drawings of the vital organs are unequalled; he gave a correct rendering of the valves of the heart and of the coronary artery; he showed that the branches of the pulmonary artery followed closely along the ramifications of the bronchi and that they ended in the region of alveoli of the lung. He noticed that there were bands running between the ventricular walls of the heart and rightfully suggested that their function was to guard against the over distention of the ventricle. He also made extensive studies of the central nervous system, and exhibited remarkable skill in the injection of the vessels of the brain. His eager and inquiring mind went even further and sought to discover the function of the component parts of the body, thereby laying down the foundation of modern physiology as well as that of modern anatomy.

Comparison of these two men cannot be made except upon the basis of the truth of their work. It is not believed that Leonardo's originality can be questioned; everything that he has touched bears evidence of his honesty and of his genius. Vesalius exploited all of his energies upon one line—descriptive anatomy; the function of the structures he described interested him very little if at all. Leonardo's interest in the subject was



much wider and he was equally as much interested in function as in structure. Vesalius was the man of science; Leonardo was the man of genius.

Fielding H. Garrison said that the relation between the two men was indeed that existing between genius and scientist. Vesalius was the first to publish a complete work upon the subject, and the publication of the *Fabrica* in 1533 marks the beginning of the modern science of anatomy.

It is granted that the influence of Leonardo, who was the first to break with the Galenic traditions, cannot be measured or justly compared with that of Vesalius. If, indeed, Vesalius had seen the copy of Leonardo's work by Dürer, his great achievement is none the less remarkable. Vesalius was a self-taught anatomist and he was indefatigable in his efforts to increase his knowledge of the subject. He dissected man and the animals, attended child-births and public executions, visited torture chambers and slaughter houses, sought to look in upon an accident case or an operation: in short, he was always on the lookout for some circumstance that might conspire to show some phase or point some lesson in his absorbing study. We must remember, too, that his work sought to discredit the teachings of Galen, the greatest figure and, up to that time, the greatest authority that the science of medicine had ever known; and Vesalius, like many another reformer, was compelled to face a storm of criticism and ridicule. But in spite of this, by 1560 we see Vesalius drawing great crowds of the learned of all classes and travelling about and lecturing in all the important cities of Europe.

The *Fabrica*, which was published in 1543, is a wonderful work and is beautifully illustrated by an Italian artist, a pupil of Titian. The drawings, however, are not all of equal merit, and some doubtless bear the touch of Vesalius' own hand. The whole work bears undisputable evidence of Vesalius' honesty, accuracy, vision and wisdom.

Marks, in 1848, first made the accusation that Vesalius' work was not genuine, and that his plates were copies of Leonardo's anatomical drawings. That he may have seen some of them is granted, but that he copied them cannot be proved. They may indeed have influenced him, for are not the achievements and even the thoughts of all of us dependent in some degree upon that which has been accomplished and thought out before, and are not we heirs of all the past? Root says that in all of Vesalius' work there is not even a suggestion of plagiarism.

Many things conspire to discredit Vesalius. Italian anatomists of his own time were jealous of his work and tried to injure him; his old teacher, Sylvius, turned against him with acrimony and coarse abuse.

Leonardo was indeed the founder of anatomical illustration and of the science of physiology; he did a great and wonderful work and laid the foundations of the new anatomy. But his work was never completed and it does not lend itself for classification and analysis, though everywhere it bears the marks of a man of genius. Vesalius, however, was the man of science, whose mind grasped the idea of modern anatomy, amplified its material, classified it and published it. His work was that of a reformer, and from his time and because of his work, there has grown up the modern science of anatomy.

A vote of thanks and appreciation was extended to the speakers of the evening.

---

## THE OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The eightieth regular meeting of the section was called to order at 8:20 P. M., October 22, 1915, the Chairman, Doctor J. E. Cogan, in the chair.

The minutes of the last meeting were read and approved.

Under new business Doctor Lauder brought up the question of the advisability of taking some action in regard to malpractice insurance, on account of the recent ruling of the State Attorney-General that such in-

surance could no longer be written by insurance companies. The question was discussed by Doctors Bruner and Chamberlain, who expressed the belief that this ruling, if it had not already been modified, would be modified.

### Program

#### 1. Report of Several Cataract Operations Complicated with Collapse of Cornea, by Wm. E. Bruner, M. D.

Doctor Bruner's paper reported two recent cataract operations with collapse of the cornea. Both were old people; one a man 78, the other a woman 81. He re-established the anterior chamber as much as possible with normal saline solution. In the first patient the anterior chamber was re-established in two days; in the second patient it took between five and seven days. In both the visual results were good.

The paper was discussed by Doctor Lauder and Doctor Cogan. Doctor Lauder's experience was the same as reported. Although the condition looks very serious, the final results are good. His patients were also well advanced in years, one of them being 82.

#### 2. Presentation of Patient with Tumor in Tympanic Cavity (Neoplasm? Jugular Bulb?), by A. M. Painter, M. D., Youngstown, Ohio.

*X-ray Report*—In the plates both mastoids appear dense; the left slightly more than the right. This appears to be due in part to a lack of proper development of the cells. The jugular bulb can be seen encroaching upward upon the middle ear. This is more marked in the latest plates than in any other plates we have ever seen.

*Case Report*—Irene Lewellyn, aged 12 years, came to see about having her tonsils removed, gives no history of ear trouble, except has never had acute hearing. Diphtheria 4 years ago; no other illness except frequent sore throats. Family history negative.

*Physical Examination*—Enlarged tonsils and adenoids. Right ear—middle contains a large dark mass. Tympanic membrane thin and bulging over the central area, where it is pressed forward by the mass in the middle ear. The part in contact with the drum membrane appears red. Hearing in the right ear, watch 3 inches; acoumeter 4 feet. Left ear—Tympanic membrane thin atrophic, normal reflex absent, bluish cast from middle ear suggesting the same condition as in the right, although to a much lesser degree. Hearing in the left ear, watch 12 inches; acoumeter 15 feet. Diagnosis—Jugular bulb in the middle ear.

#### 3. Radiograph of a Patient with Chronic Mastoiditis Complicated with Facial Paralysis, by J. M. Ingersoll, M. D.

Doctor Ingersoll showed an X-ray of a mastoid with large sequestrum of the temporal bone producing facial paralysis. The patient was seen with Doctor Painter. History as follows:

A chronic discharging ear for years. On account of exacerbation of discharge patient saw a physician, who probed the ear canal. This was very painful. Three days later he noticed a complete paralysis of the face on that side. At this time Doctor Painter saw him. The ear canal was full of granulations and profuse discharge. Guided by X-ray, Doctor Painter operated, but did not dare remove the sequestrum for fear of the facial. At present the paralysis has entirely cleared up, although there is still discharge from the ear.

None of the members present had a similar case. Doctor Chamberlain said that he had had a temporary facial paralysis in a child and also in a man of 60 years following paracentesis of the ear drum. Doctor Cogan had had a similar experience. He had also had a facial paralysis follow an inferior turbinectomy. Doctor Quittner mentioned a patient with paralysis following acute labyrinthitis.

#### 4. Septal Deformities—Cause and Location of Different Varieties (with specimens), by Myron Metzenbaum, M. D.



Doctor Metzenbaum presented a paper upon the cause and location of different varieties of septal deformities. Paper discussed by Doctors Chamberlin and Tuckerman.

Members present were: Doctors Cogan, Metz, Metzenbaum, Chamberlin, Quittner, Kochmit, Ingersoll, Pitkin,, Mussun, Baker, Lauder, Bruner, W. H. Tuckerman, W. C. Tuckerman, Marshall, of Warren; Hill, of Canton; Painter, of Youngstown, and Stevenson, of Akron.

---

### CLINICAL AND PATHOLOGICAL SECTION

The one hundred and tenth regular meeting of the Clinical and Pathological Section was held Friday, October 1, 1915, at the Newburgh State Hospital. Program: "Presentation of Cases of Dementia Praecox," Doctor Cryde; "Chronic Depressive Insanity," Doctor K. R. Moses; "Paranoia and the Paranoic State," Doctor G. C. Stewart; "Involution Melancholia," Doctor Grossman; "General Paralysis of the Insane," Doctor A. G. Hyde, and "Review of the Treatment of Cerebral Lues at the State Hospital," Doctor Reeve.

---

### COUNCIL MEETING

At a meeting of the Council of the Academy held Wednesday, October 13, 1915, at the Bismarck, the following members were present, the First Vice-President, Doctor M. J. Lichty, in the chair: Doctors Weir, Perkins, Selzer, Storey, Moorehouse, Follansbee, Webster, Thompson, Cogan, Ford, Taylor, Humiston, Sawyer and J. E. Tuckerman.

The minutes of the last meeting were read and approved.

On motion the following were elected to Active Membership: Doctors Morrison H. Castle, John F. Corrigan, Lyle Steen Hill, W. J. Quigley.

On motion the following was elected to Non-Resident Membership: Melville D. Ailes, M. D., Garrettsville, Ohio.

On motion the names of the following applicants were ordered published: Doctors E. D. Saunders, Alvin A. Stone, B. J. Sawinski.

On motion Doctor A. W. Binckley, of Columbus, Ohio, was transferred to active membership in the Academy.

Doctor C. E. Ford read a communication from the State Insurance Commission containing the opinion of the Commissioner that the Ohio laws do not allow insurance companies to sell malpractice insurance to physicians and that policies so issued cannot be renewed.

---

**Fallopian Polypus.**—L. H. Hoffman, San Francisco (*Journal A. M. A.*), reports a case of polypus of the fallopian tube in a married woman, aged 30. She had had no children, but menstruation had always been regular and moderate in quantity and of about four days' duration. Her last menstruation had been longer than usual and accompanied with a large bloody discharge, colicky pains and slight abdominal distention. The genital organs were normal, excepting that a mass was felt in the left parametrium about 5 cm. in diameter, separable from the uterus and tender to touch. The diagnosis of ectopic pregnancy was made and the mass removed; recovery was uneventful. The pathologic report was of rupture of the fallopian tube, which contained a polypus, and coagula.

---

**Supernumerary Kidney.**—H. L. Kretschmer, Chicago (*Journal A. M. A.*), reports a case of the rare condition of accessory kidney, with only two ureteral orifices into the bladder, the two ureters of the same side of accessory kidney joining before reaching the bladder. The rare occurrence of the condition, the scarcity of case reports and lack of detail in reporting cases leave much to be desired in our knowledge of the subject. There was nothing in the history, cystoscopic examination, or Roentgen-ray findings to lead one to suspect the anomaly. It is the only one, so far as Kretschmer knows, in which two of the three kidneys were the seat of calculous disease.

## BOOK REVIEWS

**Practical Medicine Series, 1914, Volume VII, Obstetrics.** By Joseph B. DeLee, A. M., M. D., Professor of Obstetrics, Northwestern University Medical School, with the Collaboration of Herbert M. Stowe, M. D. The Year Book Publishers, Chicago. Price of this volume, \$1.35.

This excellent year book is one of a series that needs no introduction to our readers. The present volume gives just the review of the year's obstetric literature that the average practitioner wants. The editorial comments are sane and just, and especial attention is called to the brief but excellent summaries of the year's progress in the various subdivisions into which the material is classified. For example, after reading pages of abstracts of articles dealing with puerperal sepsis, one is delighted to find, on page 209, a fine digest of the preceding bewildering and often contradictory statements. One might wish that such editorial comments were introduced with more system. Some are at the end of several pages of abstracts, while others are placed in the bodies of the articles themselves. Thus one dislikes to have the statement of Tourneau (p. 66) go unchallenged: "The surgical treatment of eclampsia must be considered as a thing of the past." We fear some reader may miss the editor's note a few pages further on.

A minor criticism of a detail is that of the proof-readers having passed many typographical errors in the volumes of this series. For example, on page 62 we find the word "vicosity" (of the blood) repeated so frequently that we begin to think there must be such a word. Later in the article, however, we learn that the writer is really talking about "viscosity."

The striking feature of the year's literature as here summarized is the lack of important progress. Of the great problems before the obstetrical world, that of the toxæmias shows no slightest advance towards solution. It is a distinct relief to find the "Dammerschlaf" fight entirely ignored. The Abderhalden test seems as much *sub judice* as it did a year ago, and obstetricians disagree as radically as to the indications and methods of Caesarean section as they did then.

For anyone who wants a comprehensive view of the year's work condensed into a day's reading, this volume is strongly recommended.

J. T. S., Jr.

---

**Medical Ethnology.** By Chas. E. Woodruff, M. D. author of "Effects of Tropical Light on White Men," "Expansion of Races," etc. Rebman Co., New York.

This is the last work of Doctor Woodruff, his death having occurred during the past summer. It is along the lines of his former writings, and is a perfect storehouse of facts and opinions dealing with the problems of medical ethnology. The question of environment and its influences are quite thoroughly discussed, as well as the injurious effects of tropical light upon white immigrants, and the influence of climate, especially on the blond types. The chapter upon blondness and nigrescence is especially interesting; he asserts that skin cancers are far more frequent in light skins, in light countries, than in skins properly pigmented, and also that in migration the restless, energetic blond Aryan, migrating south, always paid the penalty with death. Like every other animal, he must stick to his zone, and can migrate east or west, but not north or south. Other chapters are devoted to man's evolution, racial physical character, pigmentation, extinction of migrants in America, ethnic psychology, etc., while the concluding chapter presents a most instructive summary of the practical application of medical ethnology. The volume embodies so much of research in the collateral fields of medicine that it will prove a most valuable addition to the physician's library.

J. B. McG.



**Practical Medicine Series, Vol. IV, Gynecology, 1915.** Edited by Emilius C. Dudley, A.M., M.D., Professor of Gynecology, Northwestern University Medical School, and Herbert M. Stowe, M.D., Assistant Professor of Obstetrics, Northwestern University Medical School. The Year Book Publishers, Chicago. Price, \$1.35.

This is a well-arranged and interesting summary of the year's advance in gynecology—a year when the European conditions have made our progress unusually small. The material is well arranged, and good judgment has been shown in the articles chosen for review. We might wish that the editorial comment and criticism were more abundant.

Probably the most new and interesting section is that relating to mesothorium, radium, and X-rays in relation to gynecological diseases. As the editor notes, these methods are proving their right to a place in association with the older surgical therapies; but we are now in a stage of saner judgment after the first hysteria of belief in their miracle-working powers.

There is, of course, the annual crop of new and near-new operations for various gynecological conditions. These are most numerous in the cases of malpositions and relaxations. Some of the more promising operations are illustrated by excellent plates reproduced from the original articles. For example, Mayo's recent (but not new) operation for the cure of uterine prolapse by suspending the bisected uterus from the abdominal fascia is beautifully shown. This operation always looks most attractive, but the reviewer dreads it because of the severe infections of the abdominal wound that have come to his knowledge.

This volume is to be recommended as an excellent, if not very critical, digest of the year's literature.

J. T. S., Jr.

### ACKNOWLEDGMENTS

**Textbook of Nervous Diseases.** For the Use of Students and Practitioners of Medicine. By Charles L. Dana, A.M., M.D., LL.D., Professor of Nervous Diseases in Cornell University Medical College; Consulting Physician to Bellevue Hospital, etc. Eighth Edition. With two hundred and sixty-two illustrations. William Wood & Company, New York, 1915. Price, \$4.25 net.

**Orthopedic Surgery.** By Edward H. Bradford, M.D., Consulting Surgeon of the Children's Hospital, Boston, and to the Boston City Hospital, Professor of Orthopedic Surgery Emeritus in Harvard University, and Robert W. Lovett, M.D., Professor of Orthopedic Surgery in Harvard University; Surgeon to the Children's Hospital, Boston; Surgeon-in-Chief to the Massachusetts Hospital School, Canton. Fifth Edition. Profusely illustrated. William Wood & Company, New York, 1915. Price, \$3.75 net.

**Physiological Chemistry.** A textbook and manual for students. By Albert P. Mathews, Ph.D., Professor of Physiological Chemistry, The University of Chicago. Illustrated. William Wood & Company, New York, 1915. Price, \$4.25 net.

**Diseases of Infants and Children.** By Henry Dwight Chapin, A.M., M.D., Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital, etc., and Godfrey Roger Pisek, M.D., Sc.D., Professor of Diseases of Children and Attending Physician to the New York Post-Graduate Medical School and Hospital, etc.

**Marie Tarnowska.** By A. Vivanti Chartres. With an introduction by Professor Luigi M. Bossi, of the Medical Department of the University of Genoa. (The increasing importance of medical jurisprudence is emphasized in the pages of this book.) The Century Company, New York, 1915. Price, \$1.50 net.

**Diseases of the Skin and the Eruptive Fevers.** By Jay Frank Schamberg, M.D., Professor of Dermatology and Infectious Eruptive

Diseases in the Philadelphia Polyclinic and College for Graduates in Medicine. Third Edition revised. Octavo, 585 pages, 248 illustrations. W. B. Saunders Company, Philadelphia and London, 1915. Cloth, \$3.00 net.

**A Textbook of Pathology.** By Alfred Stengle, M. D., Professor of Medicine, University of Pennsylvania, and Herbert Fox, M. D., Director of the Pepper Laboratory of Clinical Medicine, University of Pennsylvania. Sixth Edition, reset. Octavo of 1,045 pages, 468 text-illustrations, 15 colored plates. W. B. Saunders Company, 1915. Philadelphia and London. Cloth, \$6.00 net; Half Morocco, \$7.50 net.

**Principles and Practice of Obstetrics.** By Joseph B. DeLee, A. M., M. D., Professor of Obstetrics at the Northwestern University Medical School. Second Edition, thoroughly revised. Large octavo, 1,087 pages, with 938 illustrations, 175 in colors. W. B. Saunders Company, 1915. Philadelphia and London. Cloth, \$8.00 net; Half Morocco, \$9.50 net.

---

**Hodgkin's Disease.**—A case of Hodgkin's disease treated by vaccines and the Roentgen ray is reported by A. R. Hatcher and W. G. Lemmon, Wellington, Kan. (*Journal A. M. A.*, Oct. 16, 1915). The patient was a retired farmer who suffered during part of the same time from acute suppurative appendicitis, for which he was operated on and an abscess was drained. During this time the glands, which had been decreasing in size under the vaccine treatment and the ray, decreased very rapidly but slackened up again to the former rate after the cessation of the pus discharge. The retrogression of the glands has continued till the date of reporting, but the patient feels perfectly well except for a dragging sensation at the site of the scar. The vaccine was autogenous, prepared from a gland by Doctor F. W. Gaarde of Chicago. The authors say that while the pus discharge from the abscess may have favored the process of retrogression of the glands, as toxins from infectious processes are sometimes reported to do, their results corresponded with those of Billings and Rosenow and others, and they therefore attribute the effect mainly to the vaccines.

---

**Trichinosis.**—Three cases of trichinosis simulating frontal sinusitis are reported by E. L. Pratt, New York (*Journal A. M. A.*, Oct. 9, 1915). All of them came under his notice during the past two years. Two were seen in private practice and the third was referred to the Department of Laryngology at the Vanderbilt Clinic. He finds no mention of similar cases in a fairly comprehensive search of the literature. In all three cases there was a record of having eaten pork, and in all of them there was muscular soreness. In all the presenting symptom was pain in the region of the eye and frontal sinus. In only one was the so-called choleriform stage present.

---

**Renal and Ureteral Surgery.**—H. R. Loux, Philadelphia (*Journal A. M. A.*, Oct. 9, 1915), has reviewed seventy or more cases of conservative plastic surgery of the kidney and ureter that he has been able to gather since Weinberg's publication on the subject in 1911, including some unreported cases of his own. Loux also reports four cases in the article, one of them a successful case of implantation of the ureter into the loin. The article is a good one for consultation by those who have to do with the renal and ureteral surgery but is too full of details to lend itself to abstracting.



## MEDICAL NEWS

**The Central States Pediatric Society**—As a result of the interest developed by the recent Pediatric Clinical Meeting held in Chicago, the Central States Pediatric Society was organized in Chicago with Borden S. Veeder of St. Louis, as President. The Society has two classes of members: Active, those who are especially interested in pediatrics, and Associate, those not having a special interest in pediatrics. Among those in attendance were Drs. H. J. Gerstenberger, O. L. Goehle, H. O. Ruh and C. W. Wyckoff, from Cleveland.

**New York Skin and Cancer Hospital**—The Governors of the New York Skin and Cancer Hospital, Second avenue, corner 19th street, announce that Dr. L. Duncan Bulkley, assisted by the attending staff, will give a seventeenth series of Clinical Lectures on Diseases of the Skin, in the Out-Patient Hall of the Hospital, on Wednesday afternoons, beginning November 3, 1915, at 4:15 o'clock. The lectures will be free to the medical profession, on the presentation of their professional cards.

**Post Graduate School at Saranac**.—New York papers announce that Mr. Samuel Mather, of Cleveland, has provided money for the establishment of a post graduate school for the study of tuberculosis, to be administered by the trustees of Adirondack Cottage Sanatorium, Saranac Lake. The course will start next May and will include both laboratory and clinical work. All Saranac institutions will be utilized and associated physicians will serve as lecturers. The course at the start will be chiefly for physicians who wish to enter sanatorium work and later will be extended, through co-operation with municipal tuberculosis departments of the eastern cities, to train those who desire to enter this field.

**Prevention of Blindness**.—The National Committee for the Prevention of Blindness has issued the following circular describing what women's clubs and nursing organizations can do to prevent blindness. It is estimated that 50 per cent of all blindness is preventable. This statement will be surprising to many—that one-half of the sightless people in this country need not have been blind had proper care been given to their eyes. But it has long been known by those endeavoring to prevent unnecessary blindness that more than a quarter of the pupils in the schools for the blind are sightless because their eyes were not properly treated during the first few days of life; that poor midwives are in part responsible for this tragedy; that children become totally or partially blind from neglected "sore" and "weak" eyes, and from neglect after attacks of such infectious diseases as measles, scarlet fever, etc.; that progressive nearsightedness among children may cause total or partial blindness if neglected; that household and industrial accidents cause the loss of many eyes; that drinking wood alcohol or inhaling its fumes in close places causes both blindness and death; that inadequate lighting and glaring surfaces are responsible for much visual disturbance, including eye-strain; and that eye-strain is a frequent cause of both mental and physical inefficiency.

Visiting nurse organizations and women's clubs, working independently or, better still, together, can perform valuable service in the elimination of these causes, thereby saving babies, children and adults from lifelong blindness.

**"Babies' Sore Eyes" (*Ophthalmia Neonatorum*)**

This disease, which causes so much blindness, is preventable and, if taken in time, is curable.

The prevention of blindness from babies' sore eyes is accomplished through the routine use of 1 per cent solution of silver nitrate, or some such prophylactic, in all infants' eyes immediately after birth, and by prompt and skillful treatment of babies' eyes when they become red, swollen and discharging, whether or not a prophylactic has been used.

1. Does the birth certificate used in your locality include the question, "What preventative did you use for ophthalmia neonatorum? If none, state the reason therefore?"
2. Are prophylactic outfits distributed gratuitously by your Health Officer to doctors and midwives?
3. Are doctors, midwives and parents required to report to the Health Officer, within six hours, redness, swelling or discharge from the eyes of infants in their care who are under three weeks of age?
4. Is this reporting now printed on the birth certificate—thus acting as a constant reminder?
5. Has the Department of Health a nurse in its employ, or does it so co-operate with a nursing organization that it may send a nurse at once to visit each reported case and secure adequate medical or hospital treatment for uncared-for cases?
6. Are there such hospital facilities for the care of babies' sore eyes that the Health Officer may send an infant to a hospital without delay if the eyes are in a serious condition?

Take these points up with your Health Officer, interested oculists and obstetricians, and don't rest until they are all attended to. Make it your business to see that any baby suffering from sore eyes, of which you have knowledge, is given prompt and adequate medical attention.

Try to have at least one nurse in the community for eye work exclusively, and see that there are hospital facilities for treatment of severe cases of babies' sore eyes.

### Midwives

These women attend about half the births occurring in this country, and the majority of them are dirty, ignorant and generally unfit to assume the care of mothers and babies. Although the carelessness of many physicians is equally reprehensible, it is due in great measure to the ignorance and neglect on the part of midwives that many babies become blind from babies' sore eyes.

1. Are there midwives practising in your community?
2. Are they registered by an official body?
3. Is it required that they be adequately trained; pass an examination; obtain a license; and register before beginning to practise?
4. Has your community a midwife training school connected with a good hospital?
5. Do the practising midwives give clean, careful nursing care to mother and child, and instruction to the mother concerning hygiene of pregnancy and care of her child?
6. Has the State or City Health Department adopted rules regulating midwives' practise in detail and requiring them to summon a physician in all but normal cases?
7. Are there inspectors to enforce the rules and give helpful advice to the midwives?

Make it your business to find out about this, for the sake of the mothers and babies. Your Board of Health is the proper body to have control of midwives. The Board of Education should regulate their training and licensure.

### Eyesight of School-Children

Many normal children seem backward because they have sore eyes or defective vision. Failure to correct these defects will probably mean continued retardation for many of the children, and inability to reach their highest possible mental and physical development and economic efficiency. Continued neglect may result in partial or total blindness.

1. Are all class-rooms in your schools adequately lighted?
2. Are the blackboards and tops of the desks lusterless?



3. Are all of the desks adjustable?
4. Are the children's eyes carefully and regularly examined for near-sightedness and other visual defects, and for various kinds of "sore" eyes?
5. Is this done by an oculist?
6. Are there clinics where school-children with "sore" or "weak" eyes may be treated?
7. Is there provision for furnishing eye-glasses to indigent children who need them?
8. Are common towels allowed in your schools? (They spread eye diseases.)
9. Are the children taught how to take care of their eyes?

Improving the eyesight and general surroundings of school children will be of immediate benefit to them, and will increase their chances for enjoying health and prosperity later in life.

Talk to your Board of Education about this—it is important. The children can't do it themselves.

### Industrial Accidents

Many good workmen are seriously handicapped and even become public charges as a result of losing one or both eyes in an accident that might have been prevented. Men, women and children often suffer from severe eye-strain because they are not provided with adequate light while at work.

1. Are workmen in the factories and shops in your locality protected from eye accidents by goggles; guards on emory wheels; screens to catch flying chips; guards on water gauges; etc.?
2. Are the factories, workshops and workrooms adequately lighted?
3. Are workmen examined to see that they are not especially liable to accidents because of defective vision?

Take these points up with your Department of Labor, Industrial Safety Commission, or some similar body.

*The eyes are bread-winners and must be carefully guarded.*

### Wood Alcohol

Wood alcohol is a poison which may cause blindness or death if swallowed, or if its fumes are inhaled in an inadequately ventilated place.

1. Have you a law forbidding wood alcohol to be sold in any form without a poison label and warning?
2. Is the use of wood alcohol absolutely forbidden in beverages, medicines and toilet preparations?
3. Are your druggists, paint and varnish dealers, liquor dealers, grocers and barbers prosecuted for failure to comply with the above restrictions?
4. Is wood alcohol used in any of your local industries? If so, are employers required to protect their workmen from poisoning by providing adequate ventilation?

Your Board of Pharmacy, Department of Labor, Health Department and Commissioner of Excise have jurisdiction in this matter. Find out what they are doing about it. In the mean time, urge your druggists to give up the sale of wood alcohol, and urge your friends to use denatured alcohol instead. It is safer and cheaper than wood alcohol.

The National Committee for the Prevention of Blindness wants your help and co-operation in spreading the knowledge that much blindness is needless. It has data and information, lantern slides, exhibits and pamph-

lets on the various causes of unnecessary blindness and methods of prevention, and it is glad to share these with workers in all parts of the country.

In order to accomplish the ends suggested in the foregoing program, it is necessary to have official action, supported by public opinion. Try to have at least one big popular meeting annually under the joint auspices of the local Medical Society, the Health Officer Department, Superintendent of Schools, Y. M. C. A., women's clubs, nursing organizations and relief agencies. Arrange for talks before school children, mothers' clubs, etc., and secure as much newspaper publicity as possible. Write to the National Committee for suggestions and assistance.

*The educational work must be sustained—the effort unremitting.*

ELLA L. BLAIR,

Chairman, Public Health Department, General Federation of Women's Clubs.

CAROLYN C. VAN BLARCOM,

Chairman, Committee on Prevention of Blindness and Midwives, National Organization for Public Health Nursing,

Secretary, National Committee for the Prevention of Blindness  
130 East 22nd Street, New York City.

## THE ROCKEFELLER FOUNDATION ANNUAL REPORT—PART I

The Rockefeller Foundation will shortly issue its first annual report, covering the period to the end of 1914.

It is the plan of the Trustees to issue hereafter a full report soon after the close of each calendar year.

Problems of organization, and details in connection with reporting upon the work of the International Health Commission (which report in full is to be included in the report of the Foundation), have occasioned the delay in the issuance of the first report.

The first part of the annual report of the Rockefeller Foundation to be made public deals with the activities of the International Health Commission.

### INTERNATIONAL HEALTH COMMISSION

The first meetings of the Rockefeller Foundation, after its legal organization had been completed, were devoted to the discussion of the policies and lines of work which were likely to present the largest probability of permanent and far-reaching usefulness. There was a general agreement that the advancement of public health through medical research and education, including the demonstration of known methods of treating and preventing disease, afforded the surest prospect of such usefulness. It was, accordingly, decided at the meeting of June 27, 1913, to establish the International Health Commission.

Mr. Wickliffe Rose, Administrative Secretary of the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease, was appointed Director-General of the International Health Commission, and Doctor John A. Ferrell was appointed Assistant Director-General, the President and the Secretary of the Foundation serving *ex officio* as Chairman and Recording Secretary respectively.

### What the Commission Has Undertaken to Do

The resolution creating the Commission assigned to it two tasks:  
(1) "to extend to other countries the work of eradicating hookworm



disease as opportunity should offer"; and (2) "so far as practicable to follow up the treatment and cure of this disease with the establishment of agencies for the promotion of public sanitation and the spread of the knowledge of scientific medicine." In keeping with this definition of purpose the Commission has directed its initial efforts to the first and more immediate task of extending to foreign countries work for the relief and control of *uncinariasis* or hookworm disease.

The relief and control of this one disease is an undertaking of enormous magnitude. The infection belts the globe in a zone about 66 degrees wide, extending roughly from parallel 36 degrees north to parallel 30 degrees south. Practically all countries within this zone are infected. Of the 1,600,000,000 people inhabiting the globe, about 900,000,000 live in countries where the infection is prevalent.

In many countries infection is extremely prevalent. Of 548,992 rural children microscopically examined in the Southern States, 39 per cent were found to be infected. Reports received by the Rockefeller Sanitary Commission in 1911, and summarized in its *Publication No. 6*, estimate: that of the population of Columbia living between sea level and 3,000 feet above, 90 per cent are infected; that of the population of British Guiana, 50 per cent are infected, the infection among the coolies on sugar estates being even greater; that in Dutch Guiana the infection on many plantations runs as high as 90 per cent; that in Egypt the infection of the laboring population is approximately 50 per cent; that 50 per cent of the Indian coolies on sugar and tea estates in Natal are infected; that on many plantations in Ceylon the infection runs as high as 90 per cent; that there is an extremely heavy infection in some parts of India and among the coolies on many estates in Malaya and Fiji which import their labor from India; that the southern two-thirds of the Chinese Empire is involved, the infection in many parts of the Yangtse Valley running as high as 70 to 76 per cent among the farming population.

The relief and control of the disease in a given country involves: (1) Making a survey to determine the geographic distribution and the approximate degree of infection; (2) microscopically examining the people and curing those who are found infected; and (3) setting in operation and making effective such sanitary measures as will put a stop to soil-pollution.

The International Health Commission has not undertaken to eradicate *uncinariasis* in any country. The accomplishment of this result will require the operation of permanent agencies working over long periods of time. The attitude assumed by the International Health Commission toward this work is that assumed by the Rockefeller Sanitary Commission in its co-operation with the Southern States, namely: that the bringing of this disease under control in any country is a work which no outside agency working independently could do if it would, and one which no outside agency should do if it could; that if the infection is to be stamped out in any area the country in which it exists must assume the responsibility; and that the Commission may be of service in so far as it may co-operate with the governments of foreign countries in organizing and making effective their own agencies. In this spirit the Commission has accepted the invitation of eleven foreign countries during the current year to co-operate in the relief and control of this disease. It is prepared to extend this co-operation to other countries as conditions invite.

### Preliminary Investigations and Conferences

At the first meeting of the International Health Commission, June 27, 1913, the Director-General was authorized to go in person or to send a representative to British dependencies and to Latin-American countries for the purpose of preliminary investigation and conference. Travel on these missions consumed most of the time of the Director-General during the first twelve months of the Commission's existence. Three such journeys were made: (1) to England; (2) to the British

West Indies; and (3) to Egypt and British dependencies in the Far East. Doctor J. H. White, of the United States Public Health Service, represented the Commission on similar journeys to countries in Central America.

As a direct consequence of these visits and of the hospitable reception given to the Commission's offer of co-operation, plans were adopted and work begun in British Guiana, Antigua, Trinidad, St. Lucia, Grenada and Egypt. A plan of work was adopted for St. Vincent, but was deferred on account of the war. In Ceylon the Government and the Planters' Association inaugurated an experimental demonstration on a small scale, in accordance with the suggestions of Mr. Rose, the entire cost being met locally. In the Malay States the consensus of opinion favored the establishment of a commission to inquire into the relative importance of hookworm disease and malaria in accounting for the physical debility of the people, and since the period under review a special commission has been appointed to make a study of this problem. In addition to the work undertaken in the British colonies, the Commission has responded favorably to invitations from several Central American countries, and work has been inaugurated in Panama, Nicaragua, Costa Rica and Guatemala.

In spite of the fact that a large amount of time has necessarily been given to preliminary conferences, surveys and the work of organization, a very substantial achievement has already been made, 37,902 persons having been examined, and 19,425 persons treated in all the foreign areas, up to December 31, 1914. But more significant than the number of persons treated has been the establishment of relations of co-operation and mutual confidence between the Commission and the governments and physicians of the communities visited, and the resulting stimulation of interest on the part of the common people, whereby the principle of self-help has been steadily maintained.

In addition to carrying on its work in foreign countries, the International Health Commission has also undertaken to complete the program of the Rockefeller Sanitary Commission for the eradication of hookworm disease in the Southern States. This program did not contemplate complete eradication under the supervision of the Sanitary Commission, but aimed rather at a comprehensive demonstration in each state, first of the presence of the disease, and secondly of the method of treating and preventing it. This demonstration is now entering its final stage with the inauguration of the so-called intensive community work whereby, in a limited number of typical communities in each state, it is hoped to show convincingly the possibility of treating every infected person, and at the same time of preventing soil pollution—the only way of preventing the recurrence of the disease.

### Methods Being Pursued

1. **Work Under Authority and Direction of Government.**—In each country where this work is in progress it is being done under the authority and direction of Government. This is regarded as fundamental. The International Health Commission does not undertake to eradicate *uncinariasis* in any country; the infection can be brought under final control only by means of permanent agencies working over long periods of time. The Commission, therefore, while co-operating with Governments in the work of immediate relief, seeks to do this in such a way as to aid in building up permanent public health agencies for the control of this disease and all other diseases.

2. **Work Begins on Small Scale.**—The plan of work adopted for each country makes provisions for beginning operations on a small scale. This has distinct advantages. The opening of work in each new country must be in the nature of an experiment. By beginning operations on a small scale opportunity is given, without waste of funds, to try out agencies and methods until they have become adjusted to local conditions. When the effective working unit for these conditions has been



ascertained this unit can be multiplied at will. On opening work in a new country it becomes necessary also to train a local staff of microscopists, nurses, and caretakers for the service. When it has become standardized, the service itself is the best training-school for its own employes; and the training of employes goes hand in hand with the enlargement of the work.

**3. Treating the Infected.**—In all these countries the work is organized with a view to centering first effort on measures of relief—that is, on treating the people who are found infected.

Systematic treatment is justifiable if only as a means of relieving suffering and inefficiency. Within the brief period during which the work has been in operation 19,425 persons have been treated. The significance of this result is to be stated not primarily in medical terms, as the relief of 19,425 people, but in education terms, as the instructing and moving to action of a much larger number of people. For every person successfully treated becomes the effective teacher of a circle of friends and neighbors.

**4. Infection Survey.**—Effort is being made in each country concerned to carry out a survey to determine the geographic distribution of the infection, and to estimate the degree of infection for each infected area.

**5. Preventive Measures.**—The organization in each of the eleven countries is conducting a sanitary survey to determine the existing conditions responsible for the presence and spread of *uncinariasis* in the infected areas. In Egypt, where the absence of ground-itch has given rise to doubt as to whether the infection is transmitted chiefly through the skin or by the mouth, this survey has for its object: (1) to ascertain how the infection is transmitted among the fellahin; and (2) to locate the danger-points about the Egyptian village from which the infection is spread.

The final purpose of the survey in Egypt, as in all the other countries, is to lay the basis for a system of sanitary measures designed to bring the disease under control.

**6. Educating the People.**—This whole work is essentially educational; it is teaching the people by demonstration. The field directors carry the work out among the people. They tell the story of this disease in varied graphic forms and in terms so simple that the common man, though he be illiterate, may see and understand. In the Southern States the schools and the public press were enlisted and large use was made of pamphlets, leaflets, and circular letters. These agencies are not being neglected in the foreign field; but among the natives in many of the tropical countries the story must be presented in more direct and concrete terms. Here the field directors rely more upon telling the story by word of mouth; and as they tell it they illustrate its details by means of lantern-slides, photographs, and objects. They use typical cases as object-lessons; they point out the gross clinical symptoms in these cases (and these the people soon learn to recognize); they get specimens of the patients' stools and exhibit the eggs of the parasite under the microscope; they show the parasites that have been expelled by the treatment administered; and by means of the microscope they exhibit the living, squirming embryos that live by teeming thousands in the soil that has been befouled by an infected person, and are ready to infect any person with whose bare skin they come into contact. The recovery that follows treatment and cure tells its own story, both to the patient and to his friends and neighbors. The disease thus lends itself so readily to simple demonstration that the people—even native populations of tropical countries—easily understand its whole story. They learn to recognize the disease by its clinical picture; they have seen the parasite that causes it, and the eggs by which infection is demonstrated; and they see how the infection is spread and how it may be prevented. As a result of this educational work, the people co-operate helpfully, in both the work of treatment and that of prevention.

**7. An Object Lesson in the Treatment of Disease.**—The relief and control of this one disease is an object lesson in the relief and control of disease in general. This one is simple and tangible; the common man can easily understand what it is, and what it means to him as a menace to his health and to his earning power; he knows its whole story; he knows its simple treatment and its one simple preventive measure. Having seen this one disease brought under control and having had the worth of the effort brought home to him, he is prepared to give heed when spoken to about the control of diseases that are less simple and less tangible. To repeat, then, for the sake of emphasis, this whole work is essentially educational; and its best result is in securing the helpful co-operation of the people in the work of bringing this disease and all other preventable diseases under control.

---

**Unusual Appendix.**—W. W. Grant, Denver (*Journal A. M. A.*, Oct. 16, 1915), describes an unusual condition of the appendix in a young man who had come out to Colorado with a mild case of tuberculosis and who had been pronounced well. He was taken suddenly one night with severe pain over the abdomen, which continued six or eight hours, leaving a tenderness of the lower abdomen for four or five days and embarrassing him in straightening out his body while at work. A little over two months later he had a second attack and ten days after this he came to Denver and consulted two prominent physicians, one of whom considered the trouble probably tuberculous and the other thought it in some way connected with the appendix. There was a well-defined mass as large as a clenched fist just below the navel. The clinical history and the immediate subsequent events were diagnosed as perforated appendix and operation showed an ill-defined mass covered by partially gangrenous omentum in front and protected on all sides by closely adherent small intestines. By delicate dissection the intestinal and mesenteric adhesions were released from the tumor, and when the body of the tumor was freed, the upper portion of the appendix was stripped of adhesions. A very mobile cecum was found with no adhesions above the stump of the appendix. When removed the latter measured 10 inches in length. Drainage was used for five or six days and the recovery was uneventful. The concretion had a hard shell about a sixteenth of an inch thick, giving a distinct metallic ring when struck with a scalpel. Its color was yellow resembling that of cholesterol. The surface was thickly sprinkled with sharp spines, the interior was of a soft, putty-like consistence which was preserved with the concretion. The pathologic condition existed three years with an entirely negative history excepting the two attacks mentioned.

---

**Urologic Examinations.**—A. J. Crowell, Charlotte, N. C. (*Journal A. M. A.*), emphasizes the use of every available aid both for diagnosis and treatment in urologic cases, and illustrates his remarks by cases from his experience. The majority of ureteral stones can be removed by the injection of cocain and oil, provided the ureters are normal and these are used early enough after impaction. The kidney functional tests, especially phenolsulphonephthalein and blood urea, are of the utmost value in determining the condition of the kidney before operation, and after prostatectomy the blood urea test, which must be used alone, is of the greatest value.

---

**Wax Tip Catheter Method.**—B. R. Kirkendall, Columbus, Ohio, (*Journal A. M. A.*, Oct. 9, 1915), publishes a detailed description of a simplified method of passing the wax tip catheter for the diagnosis of ureteral calculi which assures the accurate location without the aid of the Roentgen ray and which will also often diagnose calculi missed by the latter. The description is too detailed to be easily abstracted without reproducing the article, and will be best understood together with the illustrations.



# The Cleveland Medical Journal

---

Vol. XIV

OCTOBER 1915

No. 10

---

## THE FIGHT AGAINST TUBERCULOSIS IN CLEVELAND

By R. H. BISHOP, Jr., M. D., Chief of Bureau of Tuberculosis, Health Division, and Secretary of the Anti-Tuberculosis League, Cleveland.

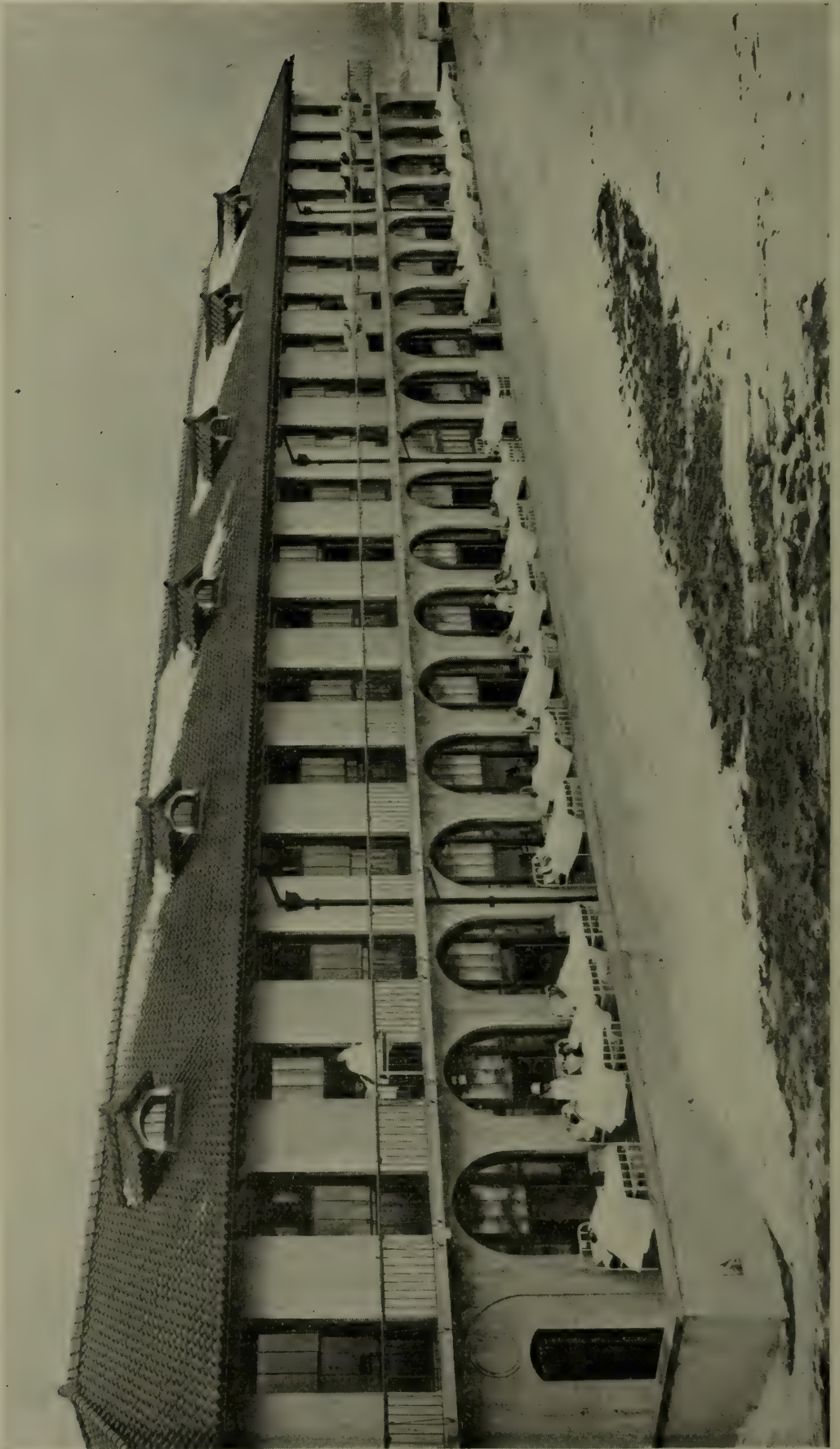
The fight against tuberculosis in Cleveland began in the fall of 1904, at which time the Anti-Tuberculosis League of Cleveland was organized. The guiding, working policy then adopted is still operative and is as follows:

"The league shall study and determine the tuberculosis problems of Cleveland, it shall demonstrate the methods of solving them, and then shall bring about the establishment of each particular piece of work under the agency which shall develop it fully and sufficiently to meet the needs of the community as a whole."

In making its preliminary studies the league referred the various problems to different organizations for information and direction. For instance, the determination of the medical problem was placed in the hands of the Academy of Medicine, the social problem in so far as material relief and assistance are concerned was turned over to the Associated Charities, the nursing problem to the Visiting Nurse Association. Every effort was made to avoid duplication and to make use in all possible ways of the organizations already in the field. The league became in fact an organization of organizations.

In the main the campaign conducted in Cleveland has been along improved lines. There has been nothing unusual about it, it has taken the same course that the campaign in most communities has taken or must take, and the only difference between the work in Cleveland and other communities is one of degree. Ahead of some communities in some respects, behind others in some respects.

There are, however, several phases of the Cleveland work that make it stand out rather prominently at this time.



Taking the Cure at the Tuberculosis Sanatorium of the City of Cleveland, Warrensville, Ohio



First. The 90 per cent efficiency of the Bureau of Tuberculosis in the Health Division in the reporting of cases prior to their death.

Second. The 90 per cent efficiency of the Bureau of Tuberculosis in meeting the needs of the entire community from the standpoint of home, sanatorium, hospital, dispensary and nursing care of the tuberculous.

Third. The 85 per cent efficiency of the Anti-Tuberculosis League in securing the transfer of its various activities to public support and control.

It is not in my power to give an analysis of all the forces that have been active in bringing about the advancement of the tuberculosis work in Cleveland. There has been felt to a remarkable degree the personal interest and influence of many individual citizens, the collective influence of hundreds of organizations and groups of people, the development of a broad social point of view through co-operation and mutual helpfulness of almost all social agencies in Cleveland. So many influences have been at work that no single one can be pointed out as the controlling one, and yet without doubt it all comes back to the question of preliminary education of the public as a whole.

There have been definite stages to our campaign in Cleveland, definite periods in which definite things were undertaken and accomplished.

*The first stage* was the same as elsewhere, one of preliminary education. In a general way almost everyone who is connected with tuberculosis work knows what this consists of, but a large part of the money expended and of the effort made is wasted for the reason that not enough care and thought is given to this all-important piece of work. The emphasis is put in the wrong place. Public interest and support are developed in terms of a free dispensary, a sanatorium, a visiting nurse, rather than in terms of the social conditions and problems that make for the presence of tuberculosis in the community. Not enough effort is made to interest the public or any considerable group of the public in tuberculosis as a social medical problem. With the development of such an interest will come a demand for means of prevention and a cure.

Cleveland is fortunate in having developed this kind of interest after a year of educational work.

*The second stage* was the stage of

- (a) Demonstration of the value of
  - (1) The free dispensary.
  - (2) The visiting nurse.
  - (3) The sanatorium and hospital care for adults and children.
  - (4) The open air school.
  - (5) The preventorium.
  - (6) The day camp.
- (b) Promotion of legislation.
- (c) Promotion of co-operation.

The splendid co-operation of practically every existing social organization in Cleveland and the personal interest and liberal support of a large number of Cleveland citizens insured the success of these various demonstrations from the start. What will be the value of any one of these agencies ten years from now in the fight against tuberculosis can not be foretold. Over varying lengths of time during a five-year period it was possible to demonstrate the present day value of each and the wisdom of extending their usefulness to the community as a whole.

Too much emphasis cannot be laid upon the necessity of private organizations confining their endeavors to a "demonstration," otherwise the work will suffer. It is not within the range of possibility for any private organization to finance the necessary machinery for the control of tuberculosis in any community, large or small, nor is it its province. The control of tuberculosis is a public health problem and as such must be supported and controlled by public agencies.

*The third stage* of our work has then consisted of the transfer of the various activities of the league to public support and control. The first step in this was the presentation of a detailed report of the needs of the community and recommendations as to the best way to meet those needs.

The immediate outcome was the establishment of a Bureau of Tuberculosis in the Health Department with an appropriation of \$7,000 for a six-months' period. Two new dispensaries were equipped and put into operation and fourteen visiting nurses were employed. A central office providing for registration of cases and administration of the dispensaries was opened. Since then (1910) there has been a gradual extension of the work under this bureau and an annual appropriation of \$39,000 is given it.





A Sample of Prevention—Tent Colony for Tuberculosis Children

With the establishment of the bureau the league, of course, gave up its dispensary and the employment of nurses.

In the meantime the School Board became interested in the development of open air schools and has undertaken this work in a large way.

The Tent Colony for tuberculosis children still remains under the control and support of the league. Arrangements are being made for its transfer to Warrensville and within thirty days it will be under public control and support.

This then is the balance sheet comparing the years 1910 and 1915:

1910	1910
The league supported:	The city supported:
1. A free dispensary. One paid physician. Six visiting nurses. Clinical attendance, 2,000. Annual cost, \$7,000. 2. A day camp. Capacity, 16. Cost, \$1,200. 3. Tent colony for children. Capacity, 30. Annual cost, \$6,000. 4. Open air school. Capacity, 25. Annual cost, \$500. 5. Relief through special committee. Medical relief only. Annual cost, \$1,200. 6. Educational work. Annual expense, \$2,000. 7. -----	1. ----- 2. ----- 3. ----- 4. ----- 5. ----- 6. ----- 7. Sanatorium. Capacity, 89. Annual cost, \$36,000. 8. Hospital for advanced cases. Capacity, 112. Annual cost, \$55,000.
1915	1915
The league supports:	The city supports:
1. -----	1. Bureau of Tuberculosis in Health Division. (a) 6 dispensaries. Clinical attendance, 9,000. 6 paid physicians (5 clinics a week) \$600 a year each. 26 paid visiting nurses, salary \$65 to \$85, not under civil service.



- |   |  |
|---|--|
|   | 1 superintendent of nurses.  |
|   | 1 chief of bureau.   |
|   | 1 stenographer in each dispensary.   |
|   | (b) Hospital admission bureau.   |
|   | All cases admitted to institutions go through this bureau.   |
|   | (c) Registration of all cases.   |
|   | 90% of all cases are registered before death.  |
| 2. ....   | 2. (d) Day camp.   |
|   | Capacity 16.   |
|   | Operated in connection with one of the dispensaries.   |
|   | Annual appropriation for bureau, \$39,000.   |
| 3. ....   | 3. Tent colony for children.   |
|   | Capacity, 50.  |
|   | Annual cost, \$10,000.   |
| 4. ....   | 4. School Board operates 8 open air schools.   |
|   | Capacity, 250.   |
|   | Annual cost, \$7,000.  |
| 5. Relief through special case committee, \$2,200 per year. | 5. ....  |
| 6. League contributes \$500 to Cleveland Health League.     | 6. Cleveland Health League consisting of 10 co-operating organizations.  |
|   | Spend \$3,000 a year on educational work.  |
| 7. ....   | 7. New Sanatorium.   |
|   | Cost, \$325,000.   |
|   | Capacity, 225.   |
|   | Annual cost, \$138,000.  |
| 8. ....   | 8. Hospital for advanced cases.  |
|   | Capacity, 100.   |
|   | Annual cost, \$55,000 (12 beds given up to make laboratory room).  |
|   | (By arrangement with county commissioners the city is paid \$1.40 a day for each case of tuberculosis cared for. A state law makes this arrangement possible.) |

There has been progress made in the work in Cleveland. Is it successful? It is too soon to make any definite statements. It stands to reason that the various phases of the work which have been demonstrated to be effective in the handling of small groups of cases can be made to be effective in the handling of thousands

of cases when developed to meet the needs of an entire community. The only question is one of administration and direction.

There is grave danger of the development of a sense of security and peace of mind wholly unjustified upon the transference of work of this kind to the municipality. It is no wonder that, after years of struggling, hard work and worry, we heave a sigh of relief as the transfer is made, but most people forget that the municipality in its true sense is the private individual in a somewhat different role. We cannot shift this burden and then wash our hands of it. We must continue to make it our work, continue to advise and encourage and be ready to strengthen any weakness of the public purse. Public finances are queer, it takes time to become adjusted to them and to become accustomed to planning ahead in such a way as to make provision for every financial need. A little patience, a fair amount of tact will win, and it will be surprising how quickly the readjustment will take place.

This brings me then to a brief discussion of the *Fourth Stage*, where we are at the present time—the stage of Municipal Development. I hope it will be possible before long for The National Association to establish some kind of a basis for comparison to be of use in each locality and in turn by each state so that the percentage table will serve as an inspiration and we will come to feel and can see that we are working for a common goal.

The greatest weakness of all our work at the present time lies in the training of our workers. Various communities, such as Cleveland, Chicago, New York, are able to train a large number of their own workers, but our work is suffering every day because public interest is developing far beyond our ability to provide trained workers to direct local pieces of work. An untrained worker is substituted, the result is disastrous in a large percentage of cases. If not disastrous, it results in a long drawn out period of experimentation, of education of the worker himself at the expense of the community.

We are establishing sanatoria and hospitals and we cannot get trained men to run them. It is not enough to have a medical degree, such a man must have special training in tuberculosis, he should be in touch with this great public health campaign so that he will see and make it his duty and pleasure to do all in his power to make the sanatorium fulfill its entire function. We are wasting too much time in trusting to chance that the man put



in charge of a sanatorium will learn to take an interest in the tuberculosis work outside of his institution walls.

To my mind we have gone far enough and are sure enough of our methods of attack to warrant some very determined effort at the establishment of a National Training School. In the case of physicians what better place could be provided than Saranac Lake, where a course of six or twelve months could be given in the pathology of tuberculosis, in bacteriology, in radiography, in sanatorium care, in hospital care and in sanatorium administration. The development of a center which would stimulate and more or less direct research work of all kinds relating to tuberculosis.

For the training of our nurses and field secretaries, arrangements could be made to give them training in several of the large centers. This is done to a certain extent already, but it needs a standardization of methods and attention to detail.

When this next step is taken there will be no question about the success of all work under municipalities, there will be no question about the lasting results.

This is our problem at the present time, and it may be yours in the course of time. Let us hope some early steps may be taken to help us solve it!

---

**Open Air Schools.**—There are 20,000,000 school children in the United States, says S. C. Kingsley, Chicago (*Journal A. M. A.*, Oct. 30, 1915), and these boys and girls spend 11,415 years in the school-rooms every school day and school attendance is compulsory. Anyone who has visited school rooms intelligently cannot help wondering how much time is lost through drowsiness, inattention and semiasphyxiation due to badly ventilated and overheated rooms. Our theory is that each boy or girl should have a grammar school education, but in fact less than one half of the whole number ever finish the eighth grade. Health inspection in public schools shows that 12,000,000 of the 20,000,000 school-children have physical defects serious enough to interfere with their school progress. In many cities from 2 to 10 per cent. of such defects are serious enough to render school experience practically useless, unless something is done to correct them. Open air school advocates believe that all school-children should have their fresh air rights. In the North the winter months constitute a problem, but Kingsley does not consider that insurmountable. The experience in Chicago with open air schools is narrated by Kingsley. Its advantages are found to be the better inspection and supervision of the children as regards ailments, the smaller number attended to by each teacher and her greater interest in her work. Tabulated statements of the physical improvement and improvement in school progress are given in the paper. The open air school advocates believe in giving the debilitated children the care and attention needed to make them useful citizens, but they also believe that they should not necessarily be sick and debilitated to have these advantages.

## OPPORTUNITIES FOR SOCIAL SERVICE AT THE CLEVELAND CITY HOSPITAL

By HOWELL WRIGHT, Superintendent

A Municipal Hospital is an institution of organized society provided by a city to care for the sick. It is but a medical means to a social end, and this end—Public Welfare—must never be forgotten. The modern hospital has outgrown the narrow field of boarding and treating sick people, and the time has come when a proper City Hospital can no longer passively receive the sick from the community at large without regard for the reason why they became sick, use them chiefly as material and often discharge them without the slightest interest in their convalescence and rehabilitation in wholesome living and working conditions. Hospitals more than any other social agency accumulate the evidence against the dangers to life in the community, dangers from contagion, from ways of living and from industry, and they must feel the responsibility to study this evidence and become leaders in the progress of prophylactic medicine. The idle convalescent is of no more value in a community than the bedridden and scarcely less expensive to support. It is not only charity and social service, but also sound economy for a city to supervise convalescence; to make it such that the patient can return to his work the sooner. A City Hospital of today must continue to give to a community scientific care for its sick and must afford opportunities both for scientific investigation and for the education of physicians, nurses and orderlies. But above all it must, through its social service work and through co-operation with all other community social agencies, give a watchfulness over public health and results that add more days of life, work and happiness to its citizens. Cleveland City Hospital has been attempting to serve the community along these broad lines. And it is the purpose of this paper to point out what the Hospital has to offer in social service results and social service opportunities.

City Hospital now can accommodate 650 patients and with the opening of the new Specific Hospital will be able to accommodate 800. By Departments it can accommodate patients as follows: General Hospital, for acute medical and surgical cases, including the Children's Department and the new Maternity Department, 300; Contagious Department, for all contagious diseases except small-pox, 100; Tuberculosis Department, for advanced cases of tuberculosis, 95; Observation and Convalescent



Departments, 155. This year the average daily attendance in the entire Hospital will exceed 535. It is a Hospital for the sick poor and as such offers extended opportunities for social service. To meet these opportunities the Hospital has the services of one social worker and the splendid co-operation of several important community social agencies. With this limited number of workers and a limited amount of money it has not been possible to serve all the purposes for which a social service department is intended, but some excellent results have been obtained from "following up" discharged patients with the co-operation of such agencies as Public Health Nurses, the Babies' Dispensary, the Humane Society, the Associated Charities, and Lakeside Dispensary.

Almost the entire time of the Social Worker is devoted to the welfare of patients in the Hospital or about to leave; to the families of patients in the Hospital and to patients after they have been discharged. Admissions to the Hospital, particularly the investigation of admissions for financial reasons, with such a limited force must of necessity receive secondary consideration. It should be noted, however, that admissions to the Tuberculosis Department are through the Tuberculosis Bureau of the Health Department, which has an investigating force of social workers, and admissions to the Observation Department are by commitment from the Probate Court. Admissions to the Contagious Diseases Hospital are considered primarily as a protection to public health. A patient is sent to this Department not merely because he has a contagious disease, but to protect the public from a contagious disease. This will also be the first consideration in all admissions to the new Specific Hospital, i. e., admissions primarily to protect public health. Practically all admissions to the Convalescent Department are direct from the General Hospital. The matter of admissions, however, to City Hospital, must receive sooner or later more consideration. The completion of the first pavilion designed to serve as an Admitting, Emergency and Out-patient Department, will no doubt present a favorable time to undertake this most important work. Such a Department properly conducted will bring both the physician and social worker into closer contact with the patient and his living and working conditions and result in more accurate diagnosis and treatment. Such a Department will also be of value in dollars and cents by preventing through investigations for financial reasons admissions to the Hospital of patients able to pay and directing them to Hospitals which admit pay-patients.

It is impossible to enumerate in limited space all the services rendered by the Social Worker and co-operating agencies to more than three hundred patients in a single year. Upon numerous occasions at the request of physicians the Social Worker has gathered social facts bearing upon the life and work of patients under treatment. Such facts have enabled physicians to treat patients with regard for the reason they became sick, and not only have such investigations benefited the patients but they have taught the physician to recognize the value of a social worker in the Hospital. Assistance has been secured for the families of patients in the Hospital; temporary and permanent institutional care has been provided for patients leaving the Hospital; homes for the aged and for homeless men have been secured; transportation, legal aid and employment obtained. In a few instances has it been possible to supervise convalescence. In a single year over 150 patients have been referred directly to other social agencies and through them definite results procured. Perhaps the most interesting and the most worth while results accomplished have been with the unmarried mother and child. City Hospital receives largely the less experienced girls of foreign parentage who have to work up to the last minute in pregnant condition and then in desperation turn to the city for help. These girls have made no preparation for the coming child or considered its future destination or support. On the contrary, they have a notion that they may leave their babies in the Hospital to be disposed of and return in haste to their work. During the past year forty-six of these cases were dealt with by the Social Service Worker. In some instances the mother and child have been placed together; in others it has seemed wiser to separate them. In every instance effort has been made to exhaust all resources to fix responsibility upon the man with some results. The Hospital is always in the closest co-operation with the Babies' Dispensary and its public health nursing force. And this co-operation has brought results in days of life and happiness to many children. The Dispensary is informed of the discharge of all infants under three years of age, and within a short time the public health nurse visits these infants to see that they are properly fed and cared for in their own homes.

In the course of a year many cases of ophthalmia neonatorum are admitted and treated at City Hospital. Careful treatment



in the Hospital and attentive follow-up work by the public health nurse after the infant has been discharged in some instances has prevented blindness. A Municipal Hospital caring for infants and young children has a deep obligation to society to see that neither infant nor child is discharged from the Hospital without first arranging for its after-care in the home.

Through co-operation with the Health Department the Hospital assists in guarding public health. It considers the communicable disease problem as a community problem and it provides the best Hospital care possible for all alike as a protection to the public health.

Social Service opportunities at City Hospital are almost unlimited. In the Tuberculosis Department the City and County spends an enormous amount of money in attempting to protect the public health. In 1914 the County paid \$49,000 for the care of tubercular patients in City Hospital, and will exceed this amount in 1915. Yet this Department is now doing little more than serving the community as a boarding-house for patients suffering with tuberculosis in advanced stages. Some are bed patients. Many, however, are up and about and have improved during their stay at the Hospital. There is comparatively little opportunity for occupation and recreation. Physicians in charge of the professional treatment of patients in this Department say that what many of these patients need is the opportunity for light work and recreation. There is little chance of providing it at City Hospital. This Department ought not to be considered forever as a place of last resort, but up to date the Tuberculosis Bureau and Dispensaries have been unable to remedy this condition. Perhaps the greatest social service the City could render at this time would be the removal of this institution to Warrensville. Surrounded as the patients would be there, with light work and recreation out of doors, the change would no doubt result in many more days of life, work and happiness.

There has been comparatively little opportunity to supervise convalescence at City Hospital, even though sadly needed, because the City has been obliged to economize. As in other municipal institutions, it has been necessary to use beds needed for acute cases for convalescent patients. The City has an opportunity to develop excellent accommodations for convalescents on its great Warrensville Farm, and every effort should be made to secure such accommodations at the earliest possible moment. Indeed, it

should be considered as a part of "a plan to economize," for it now costs \$1.75 per day to care for convalescents at City Hospital, while they might be cared for at 50 cents a day at the Warrensville Farm in small, convenient cottages, and restored to their homes and work the sooner. All of the mental patients, including alcoholics and drug users, sent to City Hospital for observation should be sent to the Warrensville Farm for convalescence, where they also might have opportunities for work and recreation and a chance to forget their troubles. As the accommodations for convalescents develop the term "convalescent" can be made more and more elastic. In time it would include a patient who had been operated upon for appendicitis and could not go back to his regular work for two or three weeks but could go to Warrensville in a week; a maternity case that ought not to go home for three weeks but could go to Warrensville on the ninth or tenth day; and patients with communicable diseases could go to isolation cottages at Warrensville as soon as the fever period were over. Children suffering from nephritis and certain diseases of childhood that mean months or years for recovery, if they recover at all, and from chronic bone diseases of childhood, should be included eventually. No Municipal Hospital service is on a high plane of efficiency unless it includes provision for the scientific supervision of convalescence.

The opening of the new 150-bed Department for acute cases of syphilis and gonorrhea will offer still greater social service opportunities and protection to the public health. This Department has been made possible by the remodeling of the old Nurses' Home Building at a very small cost. It is in line with the most advanced principles advocated for the care of such cases and in harmony with the newer and broader ideas of public health work.

To sum up: A properly conducted Social Service Department in a Municipal Hospital is neither fad nor fancy. It is a necessity. In co-operation with other social agencies it not only guards the public health but produces results that are more days of life and work and happiness to the citizens of the community. In its proper supervision of convalescence it is both life saver and money saver. Once let a group of intelligent taxpayers in any city get this firmly fixed in their minds and they will not be slow in reminding the city administration that they prefer to support the poor as convalescents at \$0.50 per day than intermittently as acute cases at \$1.75 per day.



## IMPORTANCE OF PROPHYLAXIS IN THE CARE OF INFANTS AND YOUNG CHILDREN

By C. W. WYCKOFF, M. D., Chief of Bureau of Child Hygiene,  
Division of Health, Cleveland.

The strides made in Preventive Medicine in the past few years outside of the Research Laboratory are very striking and most encouraging for those of us especially interested in Public Health work. It is very fortunate that we are not dependent on the laboratory apparatus for the solution of such Public Health Problems as Prevention of Blindness, Prenatal, Natal, and Postnatal care of Infants. Every physician and every trained nurse is duty bound to actively assist in the solution of these extremely important problems. They can be called the most important problems today in Preventive Medicine, as the death rate among infants and physical deterioration of the young children and the adults resulting from neglect in infancy, is greater by far than that caused by any disease now known. Physicians and nurses and the public at large are slowly beginning to realize that the assumption is absolutely wrong that a human being's chances for death are as great or greater in infancy as in old age. The infant deaths are in a large measure controlled by the parents and medical advisers.

If there are any who think the problem a "fad," a "play-thing of the rich," read the reports of vital statistics of foreign countries. In one report comparing eighteen of the most progressive European countries for ten years, the births per thousand population decreased from one to eight. The infant mortality in these countries, much to their concern, remain stationary, or in several instances showed an actual increase. Such statistics in our country, as you are aware, are impossible to obtain because of our meager and inaccurate birth registration records and incomplete mortality returns. Because of the number of infants under one year of age dying annually in this country in the area of registration, which number for 1912 was 300,000, and from the well-known fact American families today are far smaller than twenty-five years ago, we can conclude that the same problem presents itself to us as well as to foreign countries. No one can deny that aside from the humanitarian aspects which these statistics bring to our minds most strongly, that there is also the remote fear of a declining race. A fear which has made France since 1890 take active measures to prevent her high annual

slaughter of infants. Now, the entire civilized world is taking notice of her infant population, numerous national organizations having been started for the protection of child life.

When we speak of infant mortality we mean the ratio of the number of infants dying under one year of age to 1,000 children born alive, not to the enumerated population of the age. It is interesting to note that the number of births, excluding still-births, in Cleveland remained around 13,000, for the years 1910-11-12-13, although the population steadily increased in those years from 560,663 to 639,431. In 1914, however, there were over 16,000 births reported, excluding still-births, an increase of 3,000 in one year and only a 50,000 increase in population. It simply means that physicians are beginning to co-operate with the Division of Health in the matter of birth reports. We are told by good authority that even this 16,000 only represents about 80 per cent of the total babies born in our city for the year 1914.

### **Need of Birth Reports**

The blame for not reporting births is too often laid upon the physicians and midwives. Of course, if there is a law requiring birth registration, it is the moral obligation of the physicians and midwives to obey the law. In a great many places the latter are ignorant of the fact that such a law exists, or they have not had the reasons for reporting births set forth, and they desire a fee from the State for each birth reported.

There are three ways by which this problem may be attacked: First, educating the people in general as to the importance of accurate and complete birth registration records, and this is not difficult. Once knowing these things, a parent, being the most interested, would insist upon the registration of a birth in his family, for he, naturally, will take some pride in knowing that the new arrival is officially recognized and that a permanent record of the event is made. The second method of attack is to acquaint the physician or the midwife with the reasons for reporting births. The third is to prevail upon the State to empower a health officer to enforce present and future birth registration laws.

In February, 1910, the new vital statistic law went into effect in Ohio. It is up to each physician to see that these laws are enforced, as we, better than any other class, should understand the importance of them. In no other way could a physician better



repay in part his debt to the public for his medical school education, which, as it is today, could not be afforded unless three-fourths of the expense were furnished by public-spirited citizens.

Accurate birth registration is one of the uppermost aims of every infant welfare worker. The cause we are working for, in itself, is enough to receive the hearty support of the public, but the public as well as ourselves deserve to know how much the infant death rate is reduced by these educational propaganda. The general statements are not sufficient that so many babies under one year or two years of age were taken care of as to their proper feeding, clothing, and hygiene for the year; that so many quarts of pure milk were furnished, and that the death rate of the infants so cared for apparently decreases from year to year as compared to the general infant death rate.

### **Two Chief Causes of High Death Rate**

The two basic causes of a high infant death rate, as has so often been stated, are ignorance and poverty. The first of these exists to an amazing degree in the homes of our middle and upper classes, as well as in the poverty-stricken districts, and among physicians as well as laymen. Poverty is beyond us to remove, but for ignorance there is no excuse; we can remedy and abolish it. We must teach the importance of breast feeding, proper housing and home sanitation, proper clothing, and pure milk. We have long ago discovered that the high infant death toll in the summer months was not due to the prolonged dry heat, but that this merely sapped the last few drops of vitality from an already moribund infant body, deprived during the fall, winter and spring months of all that nature demands for growth—proper nourishment, air and protection. When these babies are born, their bodies are well nourished, their blood ready to assimilate the elements for growth. The highest death rate occurs in the first few weeks of the life and lack of breast milk is the cause far more than syphilis or some other pathological cause. The mother of today is just as willing and physically capable of nursing her infant as of old. The assertion that the function of lactation in the human female is a disappearing one is entirely without ground. From a study by Schwarz, of New York City, in 1910, of 1,500 mothers, 96 per cent were found capable of nursing their babies one month at least—88 per cent for three months, and 77 per cent for six months; and similar percentages, I am positive, will hold true in our Well Baby Dispensaries in Cleveland. The lack

of breast feeding, when the truth is known, is the low value placed upon Nature's own product for the human offspring by physicians in general, by nurses, and consequently by the public at large. "To encourage breast feeding," is the chief motto of our campaign. All other things neglected, if a babe is breast fed its chance for life is increased from 15 per cent to 85 per cent.

### Startling Statistics

From figures given by Doctor Holt, out of 44,226 deaths under one year in New York City, 28 per cent were from gastrointestinal causes, 25.9 per cent from respiratory diseases, 85 per cent of the deaths occurred in artificially fed infants. Good authorities give us the information that 40 per cent of these deaths are preventable, and, after having been in this work, one is convinced that this is a very conservative estimate. This does not mean that getting these babies to an infant hospital during their final illness or at the onset is going to save them, for when they are thus far along skillful feeding or medical treatment can do but little for artificially fed babies. We must get these babes when they are still well and teach the mother that keeping the baby well is the most important factor. Hospitals, however, are necessary, first for the few babies saved directly; second, for teaching doctors and nurses. When we undertake to educate the medical profession in the fundamentals of infant hygiene it must be done before they have finished their medical school work. That one-fourth of all the deaths in the total registration area of the United States occurs in children under 2.68 years, and that one-fourth of all born in the registration cities die at or under the age of 1.8 years, are facts urgent enough to cause every medical school of good repute to revise its courses, if it would send out men worthy of the confidence which the public places in them. These revised courses should consist of a thorough training in the underlying causes of infant mortality. This does not mean that each graduate is to be educated as a pediatricist or obstetrician, but he should be taught the importance of the prenatal instruction for the mother, the importance of breast milk, the dangers of patent foods and the importance of pure cow's milk.

The general practitioner treats many babes and takes care of the obstetrical side. He must be made to understand his responsibility. If he is going to feed the babies on the bottle he must know the relation of the elements in the food to the assimilative power of a baby's intestinal tract.



The senior students of Western Reserve Medical School are now given a course in infant mortality work. They are taken to the Department of Health Well Baby Dispensaries and out in the districts, and do actual work in preparing artificial foods for infants; they are shown the importance of breast feeding, a baby's clothing outfit for different times of the year, how to bathe an infant, and are made to appreciate that it is the paying attention to such simple things which keeps a baby well. The average practitioner is not familiar with these things and allows the ever anxious relative and "experienced" neighbor to do the advising.

Another class of individuals who will readily absorb and retain the knowledge of the baby's hygiene is the school girl of today, the future mother. The mother of today who has raised a family of eight feels that her experience is sufficient. The argument seems to be that many wrongs make a right. But even these mothers can be turned from their beaten path and taught to nurse every four hours; not to wean in the summer; not feed before the twelfth month, and to supplement a failing breast milk with pure cow's milk. The school girl not only applies her teaching to her baby brother or sister at home, but she is going to keep the fundamental parts of her teachings for the babes she may rear.

Since the establishment of the Bureau of Child Hygiene by the Cleveland Division of Health, in the summer of 1910, the infant deaths have decreased from 145 per thousand to 113 in 1914, and if all the births were reported the number would be much lower. The nucleus of our educational work is the Prophylactic Babies' Dispensary. At present there are fifteen of these dispensaries over the city, where a mother of any class is welcomed and given advice as to feeding, clothing and general hygiene for her baby. Whenever the baby is ill or has a condition which requires special supervision, it is immediately sent to the private doctor if the mother's rating shows that she can afford it; if not, she is sent to the Sick Babies' Dispensary, which is financed by private philanthropy. In this way hundreds of babies are cured of slight ailments, which, if neglected, would cause deaths in at least half of these cases. Other important educational measures employed but about which I shall not go into detail are: Public Talks, with lantern slides; Prevention of Blindness work with the new born; Boarding out of homeless babies in private homes, placing one baby in a home; Home instruction of mothers by nurses; and the most important of all, the teaching of Infant Hygiene to our Cleveland Public School girl in the seventh and eighth grades. A compulsory course was established by the Board of Education in 1913, and has been

carried on by the Medical Inspection and Domestic Science Departments.

Another extremely important branch of baby saving work to be inaugurated in the near future is the Prenatal care of mothers. The Bureau of Vital Statistics at Washington, D. C., reports that 40 per cent of all the babies who die each year under one year of age in this country, die in the first month of life. About one-half of this number die in the first week or ten days. This can only mean one thing, that is, the mothers do not receive proper instructions or care during pregnancy, nor is proper attention given at the time of the birth to either mother or babe, nor is there enough attention paid to the function of the mammary gland before and after the birth of the child. This exceptionally high early mortality could be almost entirely prevented by two things, first, abolishing midwives; second, by a more efficient obstetrical training of the medical student. The fact that 95 per cent of all births are supposed to be normal, yet 40 per cent of all babies dying under one year die in the first month, reflects in a very disagreeable manner upon the present efficiency of the average general practitioner in obstetrics. He thinks obstetrics a very simple thing; too often does he consider his obligation discharged if he is present only at the child's birth. These difficulties are remedial, however, through our medical schools. Even today our better schools are beginning to revise and improve their courses so that their graduates will be sufficiently impressed with the tremendous responsibility and efficiently trained as to the Prenatal, Natal and Post-natal duties for both mother and babe.

---

**The Teaching Functions of Boards of Health.**—In recent years there has been a great increase of state and city health department pamphlets intended for the information of the public. It is encouraging to note that President-emeritus Eliot of Harvard University is a strong advocate of such work. He says that there is nobody to give Americans the sort of instruction they need about tuberculosis, alcoholism, venereal diseases, prostitution and diet, and to give it with authority, except the medical profession and the public health officials.

"The ignorance of the American people concerning individual, family, and public hygiene is vast; and its consequences are deeply to be deplored. \* \* \* The ignorance of the American people concerning the enjoyable, healthful, and productive use of foods is profound; and this ignorance results in immense waste, reduced industrial efficiency, unnecessary ill-health, and shortened life." The ordinary American eats too much protein. It is a proper function of health authorities to instruct the public on the nutritive values of various foods as well as to protect it against unsafe food.

President Eliot has rightly called attention to the need of more well-informed zeal on the part of all persons, if the power of preventive medicine to promote the public welfare is to be fully utilized.—*Medical Record*.



## THE POSSIBILITIES OF FUTURE DEVELOPMENT IN THE SERVICE RENDERED BY A HOSPITAL TO A COMMUNITY\*

BY A. R. WARNER, M.D., Superintendent, Lakeside Hospital,  
Cleveland, Ohio

"It is better charity to keep a man from the need of a hospital bed than to care for him when in one."

Beyond and above a hospital's service to the individual sick in its beds, to the medical profession, to the cause of medical education, and to the growth of human knowledge, stands that hospital's final resultant, real service to society as the ultimate measure of excellence. There is yet occasionally a hospital performing only the first elementary function of a hospital—the furnishing of bed and board to individual sick; but there are now many at the other end of the scale giving service which is the product of hands skilled in many ways and the work of several professions—at least of the nursing, the medical, the ecclesiastic, and the sociologic. These hospitals can render the greatest service to society; it is therefore these that society will in the end elect to preserve and support.

### Prevention of Disease and Public Health

The era of prophylactic medicine is no longer a hope; it is come, a reality in fact, though it will develop in degree. The health centers established, the more frequent routine periodic physical examinations, the work of the factory physician and social service department, and the frequent use of the visiting nurse by insurance companies, indicate that individuals and corporations are becoming convinced that it already pays in days of health and productive labor better than its cost.

The composition of the average hospital ward is a public disgrace and a reproach. Here are found typhoids because we drink our sewerage, visceral and brain syphilis because doctors, dispensaries or hospitals have been too careless about letting patients slip away half cured, a menace to others and a prospective public burden; here is sometimes tuberculosis, but never chickenpox, because the community calls chickenpox contagious and isolates it, but not as yet tuberculosis; here are men sick because they worked in a danger of which they knew nothing; here is a long

---

\*This article was first published in *The American City*, September, 1915. From a paper read at the recent annual conference of the American Hospital Association, in San Francisco.

line of men useless from the primary and secondary effects of alcohol. Hospitals see the needlessness, the ridiculousness of it all even better than others; but although it often means hard work to raise the money to pay the cost, they generally endure it in a silence and with a degree of inaction that does not indicate patience or any other virtue.

If a factory begins to send to a hospital cases of lead poisoning or other industrial disease to fill the spare beds, there is a sacred duty, a trust to be fulfilled—not to appeal to the trustees for more beds for these poor sufferers, but to tell the facts, all the facts, to the local authorities, to the state board and to the public. What the authorities cannot do to force a correction of the faulty working conditions, public opinion can, and it will be done. Then the extra beds will not be needed. It is not always a compliment to a hospital when some factories elect to patronize that hospital; and if a hospital's collective conscience and regard for duty can be kept dormant by the prompt payment of ward rates, it is thereby classified if not standardized. The public has long talked about cemeteries as the burying-ground for the results of medical incompetence, and the public is beginning to talk about the hospital record room as the burying-ground for the responsibility for human lives carelessly, needlessly, wrongfully damaged or lost. A policy of silence, inaction, disregard toward industrial carelessness and other causes of needless suffering and death makes the hospital an accessory to the crime. The working conditions of some manufacturing plants are wrong entirely through ignorance and not through wilful carelessness. But this does not lessen—it increases rather—the hospital's responsibility to make the effort to relieve the detrimental working conditions; for the hospital's story told direct to the managers will in such cases promptly bring the desired results.

#### **The Practical Use of Facts and Records**

The preservation of public health in all its forms is a major work for every hospital. No contribution of facts pertaining to public health problems can in any way equal that collected by hospitals. This is due to the fact that the records are written, that both the primary and secondary diagnoses are collected together in the indexes, and that large series are rapidly collected. The poor, the people reached best by hospitals, are affected first and most by community conditions unfavorable to health. The outpatient department, by its numbers, is extremely sensitive to



changing conditions. The diagnoses made in a day or a week are a fairly accurate picture of the state of public health in the locality—a fact just beginning to be put to any use. The hospitals are the keepers of the public health more than we sometimes realize. In these days cities have epidemics of small-pox only when some dispensary misses that first case from the crowded foreign settlement.

Dispensaries will not always be departments or adjuncts of hospitals—"poor relations," as they have been called. The public interest will follow the profession to the newer fields. Although the man with tuberculosis, brass poisoning, or typhoid will continue to get most careful attention, keener interest and higher regard will be placed in the work of preventing others from getting the same troubles. The primary philanthropic institution will then be the one in the closest contact with the people, the dispensary, and the one which writes daily in its records the danger signals and the forecasts of the health of the community, now so little considered. Financial support always follows interest. Around the dispensary will be grouped the acute wards, the convalescent hospital, the hospital farm, the departments to train the maimed and handicapped back to usefulness, and other departments. Such an institution will be equipped to mend the accident or misfortune in the best way possible at the same time that it is promptly preventing more from the same source.

Sometimes even routine work and records can be used quite effectively. When the Social Betterment Committee of the Federated Churches of Cleveland decided to attempt to secure the closing of the segregated vice district, the ministers counted the men and boys who visited this district, and asked what the harvest must be. The two hospital superintendents who were members of the committee counted the cases of disease coming to our clinics. We questioned every man as to the source of his infection and were soon able to demonstrate that 40 per cent of the fresh infections with venereal disease was acquired in this small isolated vice district, although only 10 per cent of the prostitutes, street walkers and other habitually immoral women known to the police were inmates of this district. We brought the Mayor and Chief of Police of the city to our clinics to show them the constant stream of needless human suffering that came from this district to overwhelm the offenders and the innocent of this and succeeding generations—not to point out the wealth of our clini-

cal material. We opened our hospital records to them that they might realize the aftermath. The result of it all was the addition to the plans of our City Hospital of a pavilion of 150 beds for the isolation of the venereal disease, together with an increase in the beds now available; and recently—too recently to count our gain—the complete permanent closing the district by a forceful, sincere Mayor and an efficient Chief of Police, equally determined to rid Cleveland of all traces of commercialized vice. The crowding in our dermatological clinic will, I believe, soon become a little less troublesome.

The fields for service to public health and preventive medicine open to hospitals are as yet mostly possibilities for future development, but the proper use of hospital records and opportunities already promise to prevent more disease than their beds could possibly relieve with treatment. Incidentally the record room works gets results cheaper than the ward. Is the “*summum bonum*” the medical profession or is it public health?

#### **Broader Responsibilities to Patients**

Usefulness is the measure of life and of life's happiness. Usefulness may be lessened or abolished by disease, and thereby bring not only dire misfortune to the individual, but a problem to society. Such a problem begins when full usefulness ends; it is solved only when usefulness is again restored.

To hospitals society assigns the solving of these problems when the individual's resources are inadequate. The limits of the hospital field are therefore from the ending of usefulness to the restoration of usefulness. The interval between the discharge from the hospital after an acute illness and the day the man can return to work is, usually, at least a dangerous risk, if not a serious damage to a workingman. Supervision of convalescence saves too many chronic conditions, too many over-strains, and too many lives not to eventually become general. Hospitals must make the use of convalescent departments a routine; the longer stay in the wards at high cost can never stand against the far cheaper and better farm life, the open air, the sunshine, and the graded schedule of work in the garden to bring a man back to working condition. This and much more will come when the hospital's work no longer ends when the patient is “able to go home,” but when he is “fit to go to work.”



### Research and Educational

In the last few decades many medical schools have established chairs of Experimental Medicine and have provided ample laboratory facilities for borderline work with good and sufficient results. Notwithstanding the work of these university research posts, there has come to hospitals a feeling of direct responsibility to increase the store and use of medical knowledge by actively encouraging the study of problems presented by their patients instead of passively permitting this to be done. Animal experiments done in hospitals and laboratory work to prove and to check the theories, explanations and observations of the staff are becoming more common. It is in the hospitals that the practical clinical problems actually present themselves, and there is a growing belief that it is in the hospital that most of these will not only be solved for the day by a shrewd guess, or keen logic, but be so proven by animal experiments and other means that the work will be of value to others, and a benefit to posterity.

There is another benefit from the cost of experimental work often, if not always, worth more than the knowledge gained. Hospitals are becoming progressively more and more interested in the training of young medical men for their own future use and for others. Without experimental work they are trained to depend on the say of others; with it they are trained to think and to prove. It pays to train men right. Lakeside Hospital has recently backed this belief by adding five men to the resident staff and by equipping a new laboratory, that thoughtful observation, study and demonstration, or "research work," as it is often called, may be increased among them to the extent of five men's full time. By no means does this make us the leader in this particular; rather, followers in a line that is content to look to the future for even moderate results. The clinical clerk is another evidence that hospitals are taking an active interest in medical education.

### Cooperation and Mutual Helpfulness

The idea of mutual cooperation between hospitals as it is developing is hopeful and prophetic. The very idea of active competition between hospitals of a bitterness of feeling, and of any rivalry that is not simply altruistic eagerness to serve better and absolutely free from thoughts of gain to self, is unreservedly repulsive; it is entirely foreign to the purpose of all endowments, grants, or expressed tenets of purpose of any hospital. The pub-

lic servant, institutional or individual, who reveals for an instant a selfish aim is instantly discredited. Honor and gratefulness are but the acknowledgment of debt for uncompensated service.

The union of hospitals to increase the ultimate service to the community is broadening in scope. New York hospitals united to lessen waste in buying. Philadelphia hospitals united in an effort to increase the individual efficiency of the institutions. The New York dispensaries and the Cleveland hospitals have each united for the primary purpose of increasing the combined contribution of all the local institutions to the public welfare of the community, helping each to fit its work to the others and to the existing needs, eliminating overlapping and wasted energy. Surely we may look forward to the day when all hospitals shall present to society harmonious united service, adapted with the greatest care and in absolute unselfishness to the needs of the time.

What are days and weeks spent in a hospital worth to patients, and what do the "cured" and the "improved" in the discharge notes of medical and surgical histories mean? Dr. Codman, of Boston, has been asking these questions for some years. A few hospitals are now really trying to find out by thorough follow-up systems how beneficial the average "cure" proves to be, and to appreciate the later influence and the final effect of particular treatments. We are entering on the stage of the collection of the actual results as fundamental facts. From these there will come comparisons, deductions, lessons learned, and based upon these, future progress in many ways. Known results can be compared with the cost, one method with another, and society will be able to buy its health more intelligently.

---

**Public Health Education in New York City.**—In order to still further promote health education of the people of the district, lectures are arranged for public schools and recreation centres, articles are prepared for the local school periodicals, as well as for the Jewish newspapers, circulating in the district; a bulletin board, maintained in front of headquarters, carries announcements and health epigrams; a health exhibit is shown on the walls of the rooms at the Health Centres' headquarters; health leaflets of various kinds are distributed, and altogether all effective methods of health education are utilized. A local monthly periodical, called the "East Side Chronicle," is being published for this district. It contains timely health articles and local news. A copy of this paper is distributed free of charge to every family in the district.

---

**Advisory League.**—An Advisory League of physicians, social workers, etc., has been formed and periodical meetings are held for the purpose of discussing plans for the improvement of health conditions of the district. One of the prominent social workers has voluntarily undertaken the handling of all of the relief work occurring in the Health Department work of this district.



## THE PREVENTION OF SYSTEMIC DISEASES ARISING FROM MOUTH INFECTIONS AND THE PURPOSE AND PLAN OF THE RESEARCH INSTITUTE OF THE NATIONAL DENTAL ASSOCIATION

By WESTON A. PRICE, M. S., D. D. S., President and Managing Director, Cleveland.

This title implies that pathogenic infections of various organs and tissues of the body may have their origin in peridental and periapical infections of the teeth. While we do not deem it necessary to present arguments here to substantiate this inference, we realize that there are many physicians who do not yet appreciate the significance of mouth infections. The writer remembers all too vividly an incident in his own life that happened just twenty-two years ago when two prominent physicians of a western city stood beside his hospital cot, one on either side, when he was prostrated with typhoid fever, and almost came to blows in their all too heated argument as to whether or not typhoid fever was caused by micro-organisms. The fact that many hundreds had been prostrated with the disease, amounting to an epidemic, and all within a few days of each other, did not have great significance to the doubting practitioner of the older school. The sewage from an infected town had polluted the water supply. The evidence today is as overwhelming for establishing the role of mouth infections, and for those who are interested in looking it up we would refer to the large number of reports of internes and research workers. Among these some very comprehensive and convincing ones will be found in the reports of special researches on these problems conducted under the auspices of this Research Department of the National Dental Association, by Doctors Thomas B. Hartzell and Arthur Henrici, which include both studies from a clinical standpoint and the production of the definite and typical lesions experimentally. (See references Nos. 1 to 7; also papers by leading internists, 8 to 13.) Probably one of the best certifications of this presumption is found in the fact that the leading hospitals all over the country are adding to their staffs skilled dental specialists to assist in the interpretation of these dental relations.

The diseases that have been demonstrated to be more or less frequently caused by mouth infections include the following: Rheumatic Fever; Muscle and Joint Rheumatic Infections; Arthritis Deformans; Iritis, and

other eye disturbances; Focal and Diffuse Kidney Infections; Blood Vessel Coat Diseases; Endocarditis, Myocarditis and Pericarditis; Stomach, Duodenal and Intestinal Ulcers; Appendicitis; Colicystitis and Gall Stones; Various Skin Diseases, including Erythema Nodosum, Boils, etc.; Nervous System Infections, including Neuritis, Neuralgias, Ticdouloureux, Sciatica and Herpes Zoster; Glandular Infections, including the Thyroid and Pancreas; Lung Infections, including the Pneumonias; and Anemias. These are mostly embolic in their initial planting and a majority are due to the specific selectivity or trophism of varying strains of Streptococci.<sup>8 9 10</sup> In addition to the infections produced by blood stream planting, those entering by way of the lymph stream and the alimentary track, the latter due to swallowing bacteria, there are also serious disturbances produced as the result of imperfect mastication, due to faulty dental organs. Indeed, there is much evidence accumulating to demonstrate that the specific strains, which possess the remarkable power of selectivity for certain organs and tissues, may not only develop their very specific qualities in special infection areas of the mouth, but may be transferred by that patient to drinking cups, by kissing and other means to other individuals, and by finding suitable areas for growth in their mouths produce in them their characteristic disturbance or disease. Just as the organism of mumps, which is so definitely infectious, selects the parotid glands, so possibly Colicystitis, Peptic Ulcer, Herpes Zoster, Erythema Nodosum, Appendicitis and Rheumatic Infections may be proven to be transmissible. This means that the individual's infected mouth may not only be a menace and source of danger as a source of infection, for various organs of his own body, but he may plant those infections, directly or indirectly, in the systems of other individuals of the community, just as streptococcus sore throat and pneumococcus infections are planted. (See No. 11, recent work of Rosenow.)

The lesions of the mouth which produce serious systemic infections are (a) the pyorrhetic pockets due to a progressive degenerate infectious process of the tissues surrounding the teeth, (b) the masses of culturing bacteria in decaying teeth, and (c) the infections surrounding the apices of the roots with putrescent root canals. The mechanism of planting from pyorrhea pockets is probably chiefly by the passing of the organisms through the defenseless open intercellular spaces of the denuded and suppurating area about the teeth. Few people realize that a pyor-



rhetic pocket around each tooth of only one-eighth of an inch in depth would make a total of three and one-half square inches of defenseless suppurating surface, which, if it existed in any other part of the body, would greatly alarm the internist. When the infection passes into the quite defenseless tissue, the process of mastication or of biting the teeth, makes a pumping motion and spreads it. Though the exercise tends to increase the circulation and thereby nourish and strengthen the resistance of the parts, it also tends to distribute the organisms. This mastication pressure amounts, in twenty-four hours, to a ton in the average adult mouth. Having gained entrance to the tissues, the organisms are rapidly transferred by the blood and lymph streams to various parts of the body. Periapical infections are practically always due to either a dead and putrescent pulp or a lowered resistance of the tissue surrounding the apex of the root, due either to the irritation of an infected apex above an imperfect root filling or an unobliterated infection surrounded by epithelial cells. These drain usually quite directly, either continuously or recurrently, into the blood and lymph streams.

The best method of preventing or correcting the infections from each of these types is the elimination of the cause, which does not necessarily mean the elimination of the teeth, for many of the greatest and most helpless sufferers of the community are those who have lost their own teeth and cannot have substitutes that will be adequately serviceable. The apical infection, due to a putrescent pulp or irritating infected masses beyond the apex, can all be treated and eliminated by proper surgical skill. The culturing mass of bacteria in the cavities of decay in the teeth can be entirely eliminated by the proper mechanical and surgical filling of these cavities. The gingival infections, however, are very much more difficult to eliminate—many of them, however, are readily corrected by the removal of the primary irritant consisting of deposits and the increase of the circulation by massaging, which condition produces the lowered resistance of the tissue. As yet the cause of *Pyorrhea Alveolaris* or Rigg's Disease is not known, though there are very many theories and some good guesses. It is practically demonstrated that it is not caused by endamebae, nor has it been demonstrated that emetin is a cure for it.<sup>6 7</sup> The beneficial effects of emetin seen in a small proportion of cases, can be accounted for on another basis than its amebacidal action. *Pyorrhea Alveolaris* can be prevented in almost any

mouth by adequate care and attention and can be held in check in most mouths even after it has been established. It is not necessary to remove the teeth to control and prevent its progress, except in extreme cases.

There are two great primary lesions which precede and virtually cause the mouth infections which ultimately can produce the serious systemic infections. They are the decay of the teeth, with the subsequent infection or death of the pulp or nerve and resulting apical infections and the periodontal infections arising as slight gingival irritations, usually the result of deposits, the packing of food between the teeth, malposed teeth, and in most cases influenced by defective circulation of the gingival tissues. The periodontal tissues are very susceptible to degeneration processes, being rather more predisposed than most any other tissue of the body. This is illustrated by the common procedure of examining the gums of patients to identify systemic poisons, such as those of lead, mercury, etc. The alveolar bone surrounding the teeth is really a transitory structure—it does not exist in babyhood and but slightly in old age, and just as the hair falls out often prematurely, so there is continually the predisposition for this tissue to degenerate and break down. The all-important factor to prevent this is nutrition, which can only be supplied by circulation, dependent, in a large part, upon exercise. The normal exercise for our teeth is denied them by the methods of preparing our food. The cliff-dwellers, for example, who ground their fibrous roots with their teeth, as also their coarse-grained breads, had neither pyorrhea nor dental caries. They had what we are pleased to call an immunity. At times many or all of us have immunity, but it is not a constant condition, though it should be. If we will prevent systemic infections from mouth infections, we must prevent these two primary lesions. With our limited knowledge of today, we could, if we would, go far toward their prevention. That this is an important duty of every individual for his own safety and of the community in behalf of those individuals who cannot care for themselves, is amply demonstrated by the various institutions and legislations tending to this end. For example, the German Government makes it compulsory for every child to have his teeth kept in repair in order that he may grow to be a strong man and remain free from systemic infections.

In our own country The Forsyth Dental Infirmary for children, in Boston, costing three-fourths of a million and endowed



with one and one-fourth million, has been created to provide the best known care for the mouths of the children of the poor. A similar institution has recently been given to Rochester by Mr. George Eastman. In our own city a most creditable effort has been made to accomplish this result, though the task is far too large for the resources. Six dental clinics are being operated, one in each Marion, Fowler, Murray Hill, Stanard and Lawn schools and one in the Carnegie West Branch Library. There are six different operators serving in these clinics, each with an assistant. Signed petitions have come from six other schools begging for clinics, which there are no funds to establish. It is estimated that not more than one in ten children needing this care can receive attention in these clinics. That this is a great economic problem for every community is demonstrated by the fact that probably fifty per cent of the grown men of the United States would be refused for service in the United States Army on the ground of insufficient capability of mastication, if for no other cause. The British Government returned 13,000 men from the Boer War as useless because of defective teeth. There are few, if any, conservation opportunities and duties so impelling upon the government of every community as the care of the mouths and teeth of those who cannot afford to do it for themselves, and yet even our splendid municipality of Cleveland leaves this great economic problem to the processes of charity and philanthropy. The splendid work being done in this city in caring for the teeth of poor children is under the direction of the Cleveland Auxiliary of the National Mouth Hygiene Association, with the money secured by a popular public appeal.

The entire medical and dental professions and all other institutions for health preservation should combine their efforts to secure municipal care for the mouths of the indigent poor, including the regular examination and necessary dental care of every child in the community. This should be done by the municipality, purely as an economic project. It would probably add years, if not decades, to the useful period of thousands of lives of the citizens of the community. The fact that 95 per cent of all the citizens of every community have or have had one or both dental decay and infection of the gums means that a terrible price is being paid in inefficiency and ill health, and largely because we do not know adequately how to prevent the two primary lesions, namely, gingival infections and dental decay. It is estimated that

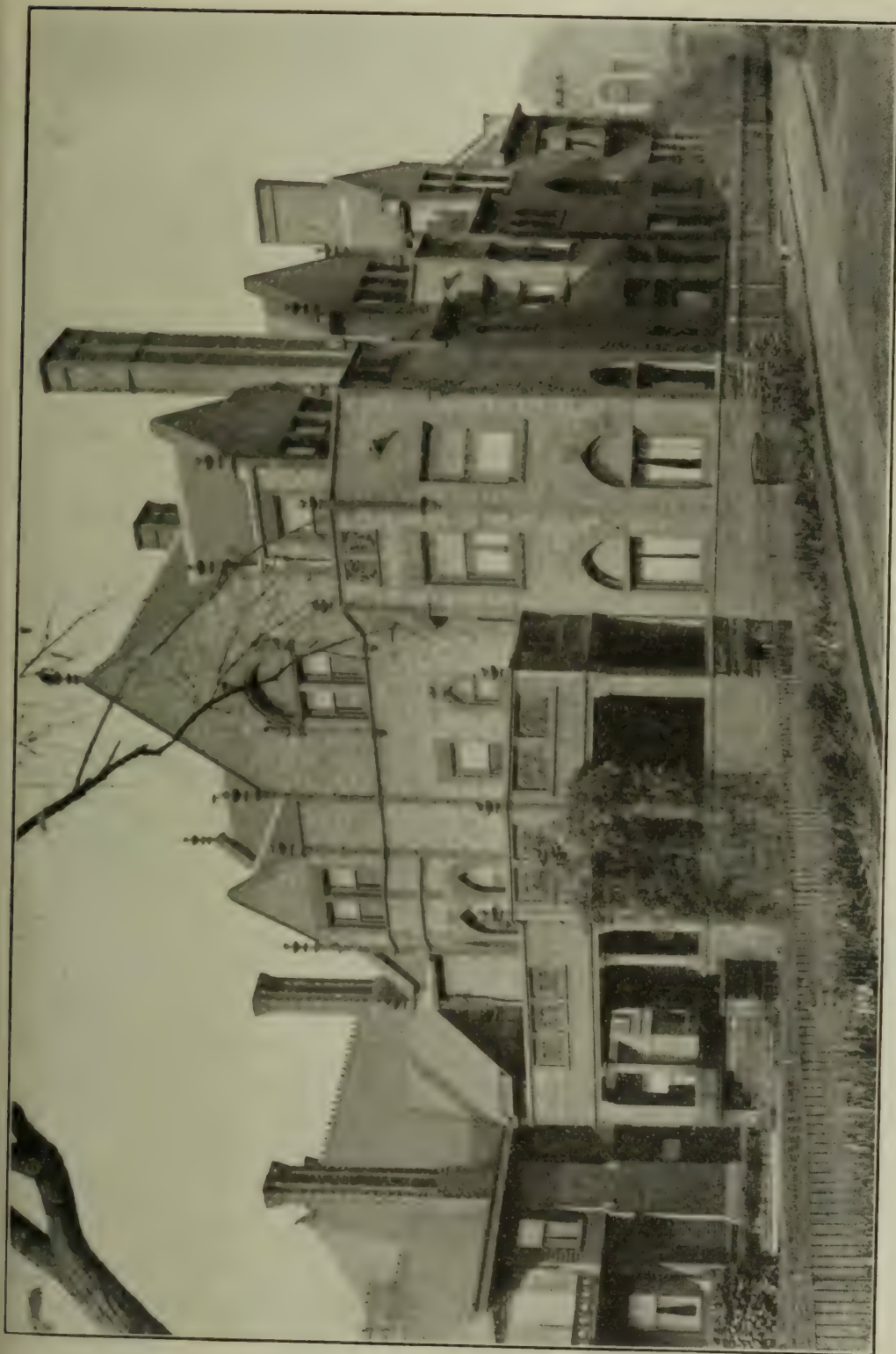
there is more total suffering in the world from dental decay and its sequences than from any other disease, because so many more people have it than have any other disease. This, together with the fact that the normal condition of life is one of immunity to both these infections and not one of susceptibility, has impelled the National Dental Association to plan exhaustive researches to ascertain, if possible, the fundamental causes and etiological factors underlying these diseases.

Their Research Department has been in operation for several years and many very important contributions have already been made toward the solution of these problems. Researches are, at the present, being conducted in eight different cities under grants made by this Research Department. They have also organized and established a national institution for research known as the Research Institute of the National Dental Association, to carry on adequate and exhaustive researches on these and other fundamental dental problems. Cleveland has been selected as the location for this National Institutional work. These intensive studies will be carried on in addition to the work that is being conducted under grants.

The plan of organization is that the corporation has a membership of sixty, twenty-seven of whom are selected by the Trustees of the National Dental Association and known as Commission Members, and thirty-three are Permanent Members and are selected by the corporation. The Board of nine Trustees has the chief responsibility for the conduction of the work in the institution and carried on under grants. They are assisted by an Advisory Board of eighteen, composed of leading men of research in their various sciences and of leaders in business and philanthropy. The Trustees have purchased, as a temporary home until adequate buildings can be erected, the large residence of Mr. S. T. Wellman, at 8803 Euclid avenue, Cleveland. Up to the present time the work of the Research Department of the National Dental Association has been supported almost entirely by voluntary contributions from the National Dental Association, which has sixteen thousand members. This has amounted to this time to about \$60,000. Besides this they are also contributing most of the money with which the above property has been purchased. They are, however, expecting large assistance from philanthropists in providing ample endowments. This is the first institution of its kind in the world.

It is their purpose to place in the Research Institute the best





THE RESEARCH INSTITUTE OF THE NATIONAL DENTAL ASSOCIATION  
8803 Euclid Avenue, Cleveland, Ohio, U. S. A.

This property consists of two buildings containing about twenty-five research rooms and a lecture room.  
The construction is of Pompeian tapestry brick.

prepared research workers, the finest equipment and most complete dental library in the world, and will carry on intensive researches on a large number of important problems. The two most important of these will be studies to find the cause and means for the prevention of periodontal infections, such as Pyorrhea Alveolaris or Rigg's Disease, and of Dental Caries. These are the primary lesions for the serious subsequent infections and involvements. Studies are already being made on the relation of various systemic infections to mouth infections, and of means for the identification of this relation, and for locating and correcting the primary focus. There are many dental problems that are very serious but very little understood, as, for example, the brown stain occurring in many Southern and Western States. This consists in the deformity of structure and color of the permanent teeth and affects all the children born in certain communities. This may involve fifty per cent of the children, as in some large districts, or from five to one hundred per cent of the children in other districts, and strange as it may seem, is so definitely localized that the children of one community, of which one hundred per cent are affected, may be within four miles of those of another community in which none will be affected. It apparently is related to a minute trace of some chemical in the water which, as yet, has not been identified. It has frequently occurred that after young women had, with great sacrifice, secured an education and training to serve their community as a nurse or school teacher, that they have been refused positions because of the serious blemish to their appearance caused by this disease. Exhaustive researches will also be conducted on the pathogenic micro-organisms of the mouth. While much work has been done, it is exceedingly inadequate, for there are still many varieties that have never been grown on artificial media and regarding which exceedingly little is known. Comprehensive studies are also being made on the relation of baby foods, particularly artificial, to tooth structure. It is a serious fact that an increasing number of children in succeeding generations have serious defect of tooth structure, which is apparently due to the increased use of artificial baby foods. Special researches are being conducted on the relation of the glands of internal secretion to defective tooth structure, susceptibility and immunity to decay, facial deformities, irregularities, etc. Investigations are being made, and more exhaustive are being planned, on the most scientific methods of



filling roots and of sterilizing and treating infected areas about root apices.

Special research rooms will be available for visiting dentists to work on special dental problems. The temporary home for the Institute is shown on page 667. The Officers, Trustees and Advisory Board of the Institute are elected from the limited membership of sixty and are given below:

The Corporation membership of 60 is made up of 27 Research Commission members elected by the National Dental Association and 33 Permanent members elected by the Corporation.

#### **Officers**

Weston A. Price, M. S., D. D. S., Cleveland, O., President and Managing Director.

Thomas P. Hinman, D. D. S., Atlanta, Ga., Vice-President.

Clarence J. Grieves, D. D. S., Baltimore, Md., Secretary.

Lefa A. Beman, Cleveland, O., Assistant Secretary.

Edward A. Petrequin, Cleveland, O., Treasurer.

#### **Trustees**

Weston A. Price, M. S., D. D. S. Cleveland, O. (1918).

Thomas P. Hinman, D. D. S., Atlanta, Ga. (1918).

Edward A. Petrequin, Esq., Cleveland, O. (1918).

George W. Crile, M. D., Cleveland, O. (1917).

Clarence J. Grieves, D. D. S., Baltimore, Md. (1917).

Eugene R. Warner, D. D. S., Denver, Col. (1917).

Harry J. Crawford, Attorney, Cleveland, O. (1916).

John V. Conzett, D. D. S., Dubuque, Iowa (1916).

Homer C. Brown, D. D. S., Columbus, O. (1916).

#### **Advisory Board**

Doctor Victor C. Vaughan, Dean of the Medical Department, University of Michigan; Ex-President American Medical Association.

Doctor Charles H. Mayo, President Clinical Congress of Surgeons, of North America; Surgeon Mayo Institute, Rochester, Minn.

Doctor William H. Welch, Professor of Pathology in Johns-Hopkins University, Baltimore, Md.; President of the Board of Trustees of the Rockefeller Institute.

Mr. H. M. Hanna, Cleveland O., Philanthropist.

Doctor Ludvig Hektoen, Professor and Head of the Department of Pathology in the University of Chicago; Director of Memorial Institute for Infectious Diseases, Chicago.

Mr. Thomas Forsyth, President and Donor of the Forsyth Dental Infirmary for Children, Boston, Mass.

Doctor Frank Billings, Dean of the Faculty, Professor and Head of the Department of Medicine and Professor of Medicine in the University of Chicago.

Honorable Myron T. Herrick, Ex-Governor of Ohio; Ex-Embassador to France, and President of the Society for Savings, Cleveland, O.

Doctor Milton J. Rosenau, Professor of Preventive Medicine and Hygiene, Harvard Medical School, Boston, Mass.

Professor Irving Fisher, Professor of Political Economy, Yale University, New Haven, Conn.

Doctor Robert S. Woodward, President of the Carnegie Institute, Washington, D. C.

Doctor Edward C. Kirk, Dean of the Thomas W. Evans' Museum and Dental Institute, Philadelphia, Pa.

Mr. Earl D. Babst, Attorney at Law, New York City.

Doctor Truman W. Brophy, Oral Surgeon and Dean of the Chicago College of Dental Surgery, Chicago, Ill.

Doctor Louis W. Ladd, Assistant Professor of Clinical Microscopy, Medical Department, Western Reserve University, Cleveland, O.

Doctor Frank R. Lillie, Professor of Embryology and Chairman of the Department of Zoology, University of Chicago, Director of the Marine Biological Laboratory, Woods Hole, Mass.

Doctor Walter E. Garrey, Professor of Physiology and Physiological Chemistry, Washington University, St. Louis, Mo.

Prominent among the Corporation Membership, and not represented on the Advisory Board or Board of Trustees, and residents of Cleveland, are the following:

Mr. Samuel Mather, Vice-President, Bank of Commerce National Association; Vice-President Western Reserve University; Director American Shipbuilding Co., Cleveland, Ohio; President Board of Trustees of Lakeside Hospital.

Mr. Bascom Little, President Chamber of Commerce.

Part of the work of the institution will be the collection and distribution of information for educational work, particularly for the medical and dental professions, making available the adaptation of the most recent researches.

---



## Bibliography

1. Hartzell and Henrici. *Journal Amer. Med. Assn.* Vol. 64, p. 1055, 1915. A study of Streptococci from Pyorrhea Alveolaris and from Apical Abscesses.
2. Hartzell and Henrici. *Nat'l Dental Assn's Bulletin.* Vol. 1-4. Report of Mouth Infections.
3. Hartzell and Henrici. *Journal Nat'l Dental Assn.* Vol. 2, No. 2. Oral Prophylaxis in Its Relation to Pyorrhea and Its Treatment.
4. Hartzell and Henrici. *Journal Nat'l Dental Assn.* Vol. 2, No. 4. Report of Minnesota Division of Research Commission.
5. Hartzell and Henrici. *Surgery, Gynecology and Obstetrics*, January, 1916. The Dental Path, Its Importance as an Avenue of Infection.
6. Price and Bensing. *Journal Nat'l Dental Assn.* Vol. 2, No. 2. Are Endamebae Important Factors in the Etiology of Pyorrhea?
7. Price. *Surgery, Gynecology and Obstetrics*, January, 1916. The Dental Aspect of the Relation of Endamebae to Pyorrhea Alveolaris.
8. Billings. *Journal Amer. Med. Assn.* Vol. 63, p. 899. Focal Infections.
9. Billings. *Journal Amer. Med. Assn.* Vol. 63, p. 2024, 1914. Mouth Infections as a Source of Systemic Disease.
10. Rosenow. *Journal Amer. Med. Assn.* Vol. 63, p. 2026. Mouth Infections as a Source of Systemic Disease.
11. Rosenow. *Journal Amer. Med. Assn.* Vol. 65, No. 20, 1687. Elective Localization of Streptococci.
12. Mayo. *Journal Amer. Med. Assn.* Vol. 63, pp. 2-25, 1914. Mouth Infections as a Source of Systemic Disease.
13. Hunter. *Lancet*, January 14, 1911. Oral Sepsis.

**Deserved Credit to a Pioneer.**—Although "good milk" was distributed to the sick poor of this city as far back as 1873 by the New York Diet Kitchen Association, and milk pasteurized and modified to a set formula was dispensed to sick babies in the summer of 1891 by the Good Samaritan Dispensary, the credit for most of the effective pioneer work in the establishment of the present system of Infants' Milk Stations belongs to Mr. Nathan Straus, who, in 1892, established his pasteurized milk laboratories with depots in various parts of the city.

Our readers may be interested to know that during the year ending September 1, 1915, Mr. Straus maintained eighteen milk stations in Manhattan, eight of them open throughout the winter.

At these stations there were supplied 2,175,208 bottles of modified and pasteurized milk, and 1,441,580 glasses of pasteurized milk. The output by months was as follows:

September .....	172,506
October .....	165,824
November .....	160,428
December .....	165,035
January .....	172,448
February .....	160,715
March .....	189,662
April .....	194,157
May .....	200,909
June .....	196,815
July .....	198,853
August .....	197,856

Year..... 2,175,208

In addition medical advice was supplied at each station. There is no doubt that this work has been an appreciable factor in the reduction of the infantile death rate in our city—*Weekly Bulletin, N. Y. Health Dept.*

## PREVENTION OF BLINDNESS

By HARRIET L. LEETE, R. N., Superintendent of Nurses—Bureau of Child Hygiene, Division of Health

Prevention of disease, preservation of the health of the community, the State and the Nation is the most interesting study, the most worth-while piece of work which can engage our attention. Prevention of the ills of babies and children should require our greatest consideration, for if we can keep children healthy until they become of school age, we have given them their best asset towards withstanding the strain of future years.

Again, one sub-division of the baby work stands out with especial clearness, as lack of care leaves permanently disastrous results, I refer now to the Prevention of Blindness, as you know, it is claimed that 40 per cent of the blindness in the world is preventable, and that 25 per cent of the pupils enrolled in schools for the blind are cases of ophthalmia neonatorum.

From the economical point alone its value is demonstrable. In Cleveland it costs the city \$30 a year to educate a seeing child, and \$200 to educate a blind child. The visits of a nurse to prevent blindness, her time, and her car fare plus the medicine used would not exceed ten cents a visit; the average number of which would be thirty visits to each case.

The Cleveland Society for Promoting the Interests of the Blind was organized in 1906 with this object: "The purpose of the Society is to further the interests of the blind and to open to them all possible avenues to independence and self-support, through investigation, education and recreation."

In March, 1911, the Babies' Dispensary assumed the responsibility of one nurse to do "eye work" with children under three years of age; in June, 1911, her salary was transferred to the Bureau of Child Hygiene, of the Division of Health, but as the supervision of the department was under the same director, there was no visible change in her work. Through newspaper publicity, interest of the physicians, and of other organizations, the work grew so rapidly that another nurse was necessarily transferred to the "eye division."

A few statistics, which are attached to the end of this article, will show the growth of the work; one reason for the growth in the number of cases is that many midwives report their cases very early; some of them report eyes when they are practically normal; the decrease in the per cent of positive cases is encouraging.



It is not possible to tell in words the value of the work from a humanitarian viewpoint; one has only to close his eyes for a time and try to think what it would mean never to see again, to realize what a calamity it would be to lose one's eyesight.

A story told by Miss Loomis, who has given all of her time to prevention of blindness since September, 1912, illustrates the work of the nurses.

A specific ophthalmia case—purulent since birth—was neglected by a midwife who did not report the case to the Health Office until the baby was six days old; a doctor was then called. He treated the eyes and instituted treatment, but also failed to report eye conditions. When the baby was eighteen days old the case was reported by the midwife, who had become alarmed. The eye nurse called at 9 P. M., took smear which was found to be positive—the eyeballs were not visible. The doctor and midwife were prosecuted, and found guilty; the midwife was fined, and the doctor was discharged, with this curious result: the midwife soon after neglected to report a specific ophthalmia case which the same doctor was called upon to treat, and which he reported immediately, and in which he took a keen interest. We have often found that the "eye nurse" on the case keeps the doctor posted and awakens him to the seriousness of ophthalmia neonatorum—specific or otherwise.

Anyone working with children under three years of age, soon understands the necessity of having infant eye work and infant welfare work under the same medical direction. Frequently in our insanitary, ill-ventilated homes, where the child's diet is not controlled, we find children whose eyes indicate a serious condition. When the child is placed in clean, healthy surroundings and given wholesome food the general health condition improves, and the eyes become normal.

Miss Doverspike, who has had the adult eye work since January, 1814, has written a story of one of her cases, which illustrates her work.

Portia was a little Italian child, five years of age, whose father had just died, and the family were all dressed in black, too absorbed in their loss to heed Portia's distress, while Portia went around all day with a pillow up to her eyes so that the light would not hurt them. The mother was very ignorant, and would not take the child to the dispensary; after thirteen visits to the home the nurse gained the confidence of the mother and per-

suaded her to allow the child to be taken to the hospital. From the hospital Portia was sent to Rainbow Cottage. One day the mother met the nurse on the street, and said, "You see Portia, you see Portia," and was so pleased that she kissed the nurse's hand and patted her arm. True to her promise to the mother, the nurse went to Rainbow Cottage to see Portia, and found her sitting up—dressed in pink rompers—pink ribbons on her hair, and looking out the window—a happy child.

Nursing for prevention of blindness requires especially trained women, as so frequently clinical symptoms indicate what the necessary care must be, even though a certain diagnosis cannot be made from the examination of the smear—the nurse learns to recognize symptoms and to differentiate between these and simple conjunctivitis, or inflammation caused by the injection of silver nitrate. Even with all of her experience and trained observation she never takes the slightest chance by making a diagnosis; if the mother cannot afford to have a private physician the nurse insists upon having the child taken to a dispensary for medical examination. Examination of all smears is made at the City Laboratory. If patients over three years of age are found whose impaired vision is sufficiently serious as to require future assistance they are always referred to the Society for the Blind; through their social service department the child or adult is given every opportunity that can be secured in order that his handicap in life may be as nearly a minimum one as it is possible to make it. All eye cases over three years of age reported to either The Babies' Dispensary or the Division of Health are given to the adult eye nurse, who is also under the direction of the Bureau of Child Hygiene. She, like the infant eye nurses, works under the medical supervision of private physicians and also takes many cases to special eye clinics in connection with the hospitals.

The work of the Bureau of Child Hygiene eye nurses is, of course, very closely affiliated with that of the midwife inspector of the Division of Health; this nurse follows up all cases of neglect and when necessary refers for prosecution physicians or midwives who are not keeping the law. The new Ohio law requires that inflammation of the eyes of the new-born shall be reported to the local Health Officer within six hours from the time of its recognition.

Monthly reports of the eye work is filed with the State Department and there is a harmonious endeavor to be of assistance



to any person in Ohio who needs care. When we fail to get in touch with any person soon enough to prevent loss of sight we know that by referring them to the Cleveland Society for Promoting the Interests of the Blind their future will be made just as bright as it is possible for human endeavor to make it.

There is also the closest co-operation with the Medical Inspection Department in the public schools, and we know that through the correlated efforts of all organizations Cleveland has been able to accomplish much towards prevention of blindness and towards making the lives of those whose eyesight has already been destroyed happier and more normal.

#### Statistics—Infant

	1914	1915
New cases .....	665	880
Positive cases .....	23 ( $3\frac{1}{3}\%$ )	20 ( $2\frac{1}{2}\%$ )
Suspicious cases .....		120 ( $13\frac{1}{3}\%$ )
Smears taken .....		187
Individual patients seen.....		1000
Visits to patients .....		8611
Simple conjunctivitis.....	306	466
No treatment needed .....	64	25
Gonorrheal ophthalmia .....	37	20
Other diagnoses .....	328	368

#### Adult

New cases .....	265	310
Individual patients seen.....		514
Visits to patients.....		4618

**Reporting Causes of Death 250 Years Ago.**—Our readers will be interested in the following very curious account of the method of gathering vital statistics in England 250 years ago:

"We have hitherto described the several steps, whereby the *Bills of Mortality* are come up to their present state; we come next to shew how they are made, and composed, which is in this manner, viz.: When any one dies, then either by tolling, or by ringing of a Bell, or by bespeaking of a Grave of the *Sexton*, the same is known to the *Searchers*, corresponding with the said *Sexton*.

"The *Searchers* hereupon (who are ancient Matrons, sworn to their Office) repair to the place, where the dead Corps lies, and by view of the same and by other enquiries, they examine by what *Disease* or *Casualty* the Corps died. Hereupon they make their Report to the *Parish-Clerk*, and he, every *Tuesday* night carries in an Accompt of all the *Burials* and *Christnings*, happenings that Week, to the *Clerk* of the *Hall*. On *Wednesday* the general Accompt is made up, and Printed, and on *Thursday* published, and dispersed to the several Families, who will pay four Shillings *per Annum* for them."

## THE PROBLEM OF THE FEEBLEMINDED, THE INSANE, AND THE EPILEPTIC

By H. H. DRYSDALE, M. D., Cleveland

In the program of modern sociology there is no subject of greater magnitude than that of the feeble-minded.

During the past few years advanced thinkers have been diligently engaged in studying the problem from every angle. Field workers have gone into the highways and byways tracing family histories and investigating causes. Civic organizations have joined with school authorities, institution officials, jurists, psychologists, physicians, etc., in an attempt to reach an intelligent understanding of how best to control and protect the mentally defective. Today all are agreed that the vast majority of these mal-endowed individuals should be permanently segregated if for no other reason than to prevent the perpetuation of their kind.

The term "feeble-minded person," in the legal sense, is construed to mean any person afflicted with mental inferiority from birth or from an early age, so pronounced that he is incapable of managing his affairs, or of being taught to do so, and requires supervision, control and care for his own welfare, or for the welfare of others, or for the welfare of the community, and who is not classified as an "insane person." In medicine, feeble-mindedness (phrenasthenia) is used generically to include all grades of so-called congenital mental defect.

An individual who is three or more years backward is considered defective.

According to reliable statistics there are in the United States 400,000 persons whose minds have not developed normally and of these not more than thirty per cent are receiving institutional care and protection. It is therefore apparent that fully 250,000 defectives are at large and a considerable number of them are capable of transmitting feeble-mindedness to their offspring.

Ohio's share in this great army of human waste has been conservatively estimated at 15,000. The institution for the feeble-minded in Columbus is equipped to take care of less than twenty per cent of this burden—1939, to be exact.

At present this institution is taxed to its limit and the doors are closed, so to speak. At all events no patients are being admitted and a long waiting list has developed. Cuyahoga county has 329 inmates in the Columbus institution, while its quota is



but 254. In a recent letter from Superintendent Emrich, he intimated that if it were possible for him to notify the Probate Judges throughout the State that their feebleminded could be admitted he would expect not less than 2,000 patients within ninety days.

A surprisingly large percentage of Ohio's mentally unfit have been found among the inmate population of houses of refuge, retreats, reformatories, penitentiaries, correction farms, detention homes, etc. For example: A careful mental analysis conducted by competent field workers in 1912 of 100 consecutive admissions to the Girls' Industrial School, at Delaware, resulted as follows:

Feebleminded .....	59
Borderline cases .....	14
Mentally retarded .....	13
Normal minds .....	14

A similar investigation conducted in 1913 of 100 consecutive admissions to the Boys' Industrial School, at Lancaster, disclosed the following:

Feebleminded .....	46
Borderline cases .....	26
Mentally retarded .....	11
Normal minds .....	17

These findings are sufficient to show the close relationship existing between feeble-mindedness, delinquency, and crime.

Studies conducted by the Research Department of the Training School for the Feebleminded, in Vineland, N. J., have disclosed the fact that practically three per cent of the children in the first five grades of public schools are defective, and fifteen per cent proved to be backward. The cause of backwardness was found in many cases to be remediable, such as hypertrophied tonsils, adenoids, defective hearing, impairment of vision, anemia, rickets, nervous disorders, etc.

But the great majority of Ohio's mentally unfit—estimated at 8,000—are outside of institutions and most of them are free to pursue their wayward and abnormal tendencies. Uncontrolled and undirected, they are a grave menace to posterity, as they propagate at fully twice the rate of normal persons.

For sociological purposes feeble-mindedness may be classified under three heads, i. e., Idiocy, Imbecility, and Moronia.

An idiot is an individual so deeply defective in mind from birth or from an early age that he is unable to guard himself from common physical dangers. His mental age never exceeds three years.

An imbecile has a mentality ranging from three to seven years, and while he may be capable of guarding himself against common dangers, is incapable of earning his livelihood.

The moron or high grade defective possesses a mentality not to exceed twelve years. Under favorable circumstances he may become self-sustaining in a limited way; may be able to converse intelligently and even assume a certain amount of responsibility. But his apparent intellectual alertness is superficial and he cannot develop beyond a certain stage. For this reason he falters by the wayside when competing on equal terms with his normal brother and is incapable of properly managing and safeguarding his affairs.

Little need be said at this time of the idiot and the imbecile, as some form of custodial protection is usually rendered necessary by the repugnance which these creatures excite and by the mockery and the dangers to which they are exposed.

But it is the moron or high-grade defective in whom we are particularly concerned, as these are the individuals who usually are considered normal intellectually; who go to school and learn; who reach the level of abstractions; who exhibit a normal development of language and employ it appropriately, but who are nevertheless deficient and incapable of that extensive co-ordination in the social relations by means of which normal youths succeed in procuring for themselves a means of livelihood.

Inconstancy is one of their marked weaknesses and it is difficult for them to persist in the direction of a chosen path. It is therefore not surprising that they fail to reach perfection in any pursuit. Whether it is because their wills become exhausted and they become incapable of the force which frequently is necessary for victory in a life full of obstacles, or because they realize their own inferiority with normal beings—this much is true—that they are often overcome with an irresistible desire to desert the post which assures to them the means of subsistence.

If they belong to a higher social grade they pass into inferior surroundings totally indifferent to the consequences, but



rather with ready complaisance. Everywhere critical or fanatical, proud or arrogant, timid or violent; always inferior, inept, inadequate, they follow a more or less rudderless course through life.

Morons among the wealthy and the aristocratic classes are especially prone to a career of irregularity, if not debauchery. Their chief characteristic is the more or less evident absence of the indication of good breeding. All that should form the objective of a rich and well-bred family is usually absent. In the enjoyment of today they take no heed of expense and many have dissipated fortunes. As naturally would be expected, their credulity, suggestiveness and fondness for flattery makes them an easy prey for the astute and the trickster. Morons of this class are never at ease in their family environment, but generally prefer the repose, comfort and ready adaptation in a lower strata; here they are not bound to any effort either intellectual or moral. All of them indulge in stupid ostentation.

Others are extremely excitable and mobile, lose their serenity and directive capacity under the influence of trifling opposition, or face with indifference dangers which any normal person would attempt to avoid.

Others are passionate, litigious, stupidly captious and easily aroused. Accessions of unprovoked anger are particularly frequent in this type.

Others are excessively talkative, cavilers, mischief-makers, slanderers, morbidly jealous and envious; if women, egotistic, inconsistent, unreasonable and oftentimes given to the boldest forms of indiscretion even in public.

Many of the unusual romances and sentimental episodes which are given more than ordinary prominence in the newspapers from time to time, have proven to concern individuals one or more of whom were morons.

Goddard, after years of painstaking analysis, finds that not less than sixty-five per cent of feeble-mindedness is inherited, and in his opinion this ratio would be much higher if reliable statistics were available in each and every case.

In former years it was taught that tuberculosis, syphilis, insanity, epilepsy, inebriety, consanguinity, traumatism at birth or during early life, etc., were leading causes. Today science tells us that such factors are in a large measure "traditional," although they may exercise a contributing influence. For in-

stance, it is now a well-established fact that consanguinity is not etiologically related to feeble-mindedness except in so far as it concerns the bringing together of two individuals with the same defective strains. In other words, heredity is the active factor; the consanguinity being merely incidental. The same holds true of inebriety. We now know that while seventy-five per cent of the mentally unfit are the offsprings of alcoholic progenitors, it has further been demonstrated that in many cases the alcoholism in one or both parents was an expression of feeble-mindedness rather than a cause. The same thing prevails in a greater or lesser degree in regard to other assigned causes.

The ratio of normal to feeble-minded children in any family is usually in agreement with the Mendelian hypothesis. According to this formula two feeble-minded parents cannot have normal children. In this connection it should be remembered that in families tainted with mental defect there will always be some uncertainty as to the parentage of their offspring. A feeble-minded woman married to a feeble-minded man, for example, may give birth to a normal child, but the husband is not likely to be the father of the child.

The feeble-minded condition often skips a generation, as statistics amply show. It is also a common observance that parents themselves need not necessarily be feeble in mind to bring forth defective offspring.

Confronted with the fact that there exists among us an appalling multitude of inferior persons, unprotected and unrestrained, and that feeble-mindedness is an inherited condition, the question naturally arises, what can be done to stem the tide of this rapidly increasing peril. Someone put the entire matter in a nutshell when he said: "You cannot change the leopard's spots and you cannot change bad stock to good. You may dilute it, possibly spread it over a large area, spoiling good stock, but until it ceases to multiply, it will not cease to be."

First of all marriage, which after all is not an individual function but an eminently social one, should be prohibited among imbeciles, epileptics and other inferior beings. Under no circumstances should a feeble-minded or epileptic woman become a mother either by mating with a normal man or a defective man. The female defective if not watched often takes to vagabondage and the carrying on of the most barefaced prostitution. Records



also show that there are three feeble-minded girls to one boy who marry.

There are laws on the statute book prohibiting the marriage of the unfit, but procreation out of wedlock cannot possibly be controlled in this manner. Then, again, the law cannot reach the offspring of the feeble-minded, who themselves are normal, but are capable of transmitting their parents' defects, to their own children. If such a law could be enacted and rigidly enforced, illegitimate births would undoubtedly be increased.

At the present time two solutions have been proposed. One is permanent segregation of the unfit, with separation of the sexes, and the other sterilization. By means of one or both of these procedures it is quite possible that feeble-mindedness and its bi-products, criminality, delinquency, prostitution, pauperism, alcoholism, perversity, etc., would be markedly diminished, if not eliminated. Segregation would properly solve the problem if it was feasible, but it is contended that no State in the Union can afford to house, care for, and properly train all the feeble-minded within its borders. I am not, however, fully in accord with this view because I am sure that if all the facts were before us the amount expended by public officials in handling the feeble-minded and their kind, at large, would be found to be greatly in excess of what would be required to maintain the "dead wood" of society in proper colonies. The Juvenile Protective Association of Cincinnati reports that the trials and commitments of Cincinnati's feeble-minded delinquents alone costs over \$2,500,000 annually.

The present State Executive has frowned upon a plan to provide increased facilities for the segregation of the unfit by blue penciling the appropriation allotted for this purpose by the Legislature. Perhaps the Governor had a good reason for doing so—most politicians do—but it seems to me that the stand he has taken in this respect should be bitterly condemned by all those interested in matters pertaining to the betterment of mankind.

The situation in Ohio today is critical. Feeble-minded delinquents are being committed to reformatories and industrial schools because there is no room for them in the institution for the feeble-minded in Columbus, where they belong. High grade imbeciles are at large in great numbers; easy victims to the temptations of the street because the State has refused to provide

facilities for their care. The next generation must bear the burden. Cuyahoga County alone has a waiting list of over fifty urgent cases, some of whom already have contributed to the State one or more illegitimate children. In many Cleveland homes, idiots of the most repulsive grades are being housed and permitted to mingle with normal children because the good and great State of Ohio cannot afford just now to provide relief.

The public school officials, I believe, are doing their part, in establishing special classes for those children unable to keep up with normal pupils. This is commendable,

As soon as pupils become old enough to be sexually dangerous (15-45) they should be permanently segregated. Goddard recommends municipal institutions for the training of the feeble-minded in communities having a population of 25,000. When the pupils of these municipal institutions pass the age of advantageous training they should be transferred to the State Custodial Farm, where they may live in happiness and at the same time contribute to their support according to their ability. Many adult imbeciles are willing workers and if properly handled could be of considerable economic value to the State.

In my judgment there is no existing condition more menacing to the future of our race; no condition which contributes more to crime and vice in this generation and to degeneration in the next than the problem of the feeble-minded. It would, therefore, seem to be the supreme duty of society to interfere with the continuance of any human stock definitely known to be unalterably unsound. Assuming that an overwhelming proportion of the mentally unfit are permanently incapacitated, the plan of permanent segregation, scientifically and efficiently carried out, is the only just and proper course to pursue.

Finally, it may be said that the act of sterilization is in the light of our present knowledge still open to criticism and objection because sterilized individuals frequently become prostitutes and although they are no longer fertile may disseminate venereal diseases, with all their disastrous consequences. For this reason, if for no other, the method of solving the problem of the unfit should be proper segregation, not sterilization.

#### The Insane

There are seven State hospitals in Ohio devoted to the care of those afflicted—with life's greatest tragedy—the loss of mind. These are located at Cleveland, Columbus, Athens, Toledo, Mas-



sillon, Dayton and Cincinnati. The daily average population of these institutions in 1913 was 12,535. Today each and every one of these institutions is crowded to its full capacity. The yearly cost of maintaining this burden is over \$2,000,000.

Admission to State hospitals requires the adjudication and commitment by the Probate Court of the County in which the afflicted is a resident. The law, however, provides for the admission of five "voluntary patients," the applicant signing a statement to remain under treatment for a period of sixty days and abide by the rules of the institution.

Psychiatry during recent years has received a most pronounced impetus. The time-old superstitious notions are rapidly fading and more wholesome ideals have taken their place. The standards of our State hospitals have been elevated, despite the fact that they are still at the mercy of political whims, and today every effort is being made to make them curative establishments in the full sense of the term. A truly scientific spirit prevails, and much valuable clinical, laboratory and psychiatric work is being performed. Best of all, the laity have taken a more hopeful attitude and everywhere is manifest an earnest desire to detect mind disorder in its incipiency and subject it to proper treatment.

In Cleveland considerable progress has been accomplished. Through the progressive activities of Judge Alexander Hadden, of the Probate Court, provision was made for the establishment of an Observation Department at the City Hospital. This department has now been in operation several years and has long ago proved its worth. Patients who have not crossed the line where sanity ends and insanity begins—doubtful or very acute cases—are observed and treated in the Observation Ward and large numbers have been discharged without certification. In this way many have escaped the stigma which a legal adjudication sometimes inflicts. Judge Hadden also is directly responsible for the establishment of a ward in the Sheriff's department of the county jail, where alleged insane persons may be detained without associating with murderers and other criminals, in the jail proper, as formerly was the case. This is a true advance; the value of which can readily be appreciated.

In other respects the Probate Court of Cuyahoga County during Judge Hadden's incumbency has endeavored to arrange for the handling of mentally sick persons in as humane a manner

as possible. When necessary he visits the unfortunates in their homes and arranges for their transfer direct to the proper hospital without having them dragged into court and subjected to the shock and upset incident thereto.

Mental and nervous diseases are today the most numerous, the most important and most costly of all diseases. They are costing the State millions of dollars each year and are entailing inestimable suffering and sorrow among the people. Statistics would indicate that the State is caring for a much greater number of insane than formerly and that the number in our State hospitals has increased much more rapidly than the general population. This, however, is in no wise proof that insanity itself is on the increase. On the contrary, it is directly the result of a more rational attitude on the part of the public towards these institutions and a breaking away of the prejudice, superstition and ignorance relative to those afflicted with mental disease.

It may be of general interest to know that the recovery rate of Ohio hospitals (20-25%) is as high, if not higher, than in similar institutions in Italy, France, Germany, England, Scotland and Switzerland.

Unfortunately, the State institutions are concerned largely with those cases which are committed by the Courts. Fully 70 per cent of these patients have been mental invalids for years and have reached a state of deterioration for which we have no remedy. But the problem confronting us does not relate to the care of chronics, although many of these regain their reason after a year's residence in hospital, but in the prevention of those types of insanity which are known to be preventable or curable.

It is contended by those best qualified to speak on the subject that if we are to meet with any success in curbing the gradual increase of hopeless insanity energetic measures must be applied at a time when there is great hope for recovery.

That a considerable number of the acute mentally sick are exceedingly susceptible to wise and judicious treatment has been demonstrated time and time again. In the Bethlehem Royal Hospital London, where only early cases are admitted, Stoddart reports recoveries in 48 per cent. This indeed compares favorably with the recovery rate in certain physical disorders.

Most authorities are agreed that the acute and favorable cases should by no means come in contact with the institutionalized mass of advanced cases, but should receive first care in a



more hopeful environment. Such persons are ill because their nervous systems are temporarily or permanently deranged. Then again incipient mind disease cannot be successfully treated in the home or in the environment in which the disturbance had its birth. Such patients are true hospital subjects. A great many of them present manifestations of exhaustion and toxæmia and are in need of the same considerate care that is usually given to those suffering from acute physical disorders.

To meet this crying need, leading psychiatrists advocate the development of psychopathic hospitals in every populous center or institutional district where early cases may be treated at a time when treatment is likely to prove remedial.

The last Ohio Legislature recommended the construction of a psychopathic building at the Cleveland State Hospital, but the powers that pass judgment on such matters finally vetoed the appropriation. Unless I am badly mistaken the Legislature will not long postpone the establishment of an "acute hospital" in Cleveland, well staffed, well nursed and well directed.

Another feature of our work which has not received in Ohio the attention it deserves relates to the after-care of insane patients. Those who have friends do not, of course, require further official supervision, but many less fortunate are obliged to convalesce in degrading and hazardous environments. In New York a committee on after-care follow the patient to his home, study his habits and social conditions, arrange for his employment and endeavor to assist him in every way in order to diminish the tendency to recurrence. Great good has resulted from this source and Ohio might also profit from the inauguration of a similar system. A special organization with visiting nurses, agents, etc., could work in conjunction with the hospital in behalf of patients who have had to re-establish themselves in faulty surroundings. In this connection it would be advisable to develop an outpatient department where these patients could seek advice and instruction with the same freedom as obtains in the dispensary service of our general hospitals. The after-care of the insane, in my judgment, is just as important as the after-care in surgical operations and during convalescence in either condition relapses and complications are very apt to occur.

The proposed movement for extending the application of the medical view of insanity to the official methods of dealing with insane persons is in a measure an extension of State care.

It provides for the building up on a medical and sociological basis, under State auspices, a system of dealing with the whole problem of mental disorders in a more efficient manner than has ever been undertaken before. The mental hospital of the future must therefore be prepared to carry out these ideals. From now on the plan of erecting mammoth "cathedral" institutions throughout the country will be superseded by the demands of modern progress, which calls for the establishment of public hospitals on the cottage plan so that patients may be treated and studied individually and not as a class. Furthermore, the success of State hospitals will no longer be measured by the executive and architectural ability of the superintendent and his low per capita cost of maintenance, but rather in his percentage of recoveries. In other words, the mental hospital of which I speak will be a well governed general hospital with efficient medical staff, skilled nurses—preferably women—diet kitchens, surgery, laboratory, hydrotherapeutic and electrotherapeutic appliances, hygienic surroundings and congenial environment—a true hospital in every sense of the term. Combat these facts as much as we choose, the thought will return that insanity, so-called, is a definite disease and the hospital idea must shape our treatment of its various phases and our construction of the buildings in which we attempt its cure.

The wide call for these improvements is not merely a sentimental cry to avoid the stigma of insanity which so many keenly dread, but is a cry to secure early treatment for individuals who need it badly. It has now become a universal appeal and the general trend of thought is focussed in this direction. Ohio must do her part in the way of its development.

#### **The Lima State Hospital, Lima, Ohio**

This institution, which was opened last year but is still uncompleted, provides for the care and special treatment of insane persons of the following classes:

1. Persons who become insane while in the State reformatory or the penitentiary.
2. Dangerous insane persons in other State hospitals.
3. Persons accused of crime, but not indicted because of insanity.
4. Persons indicted but found to be insane.
5. Persons acquitted because of insanity.



6. Persons adjudged to be insane who were previously convicted of crime.
7. Such other persons as may be directed by law.

This institution when completed and fully equipped will probably be the finest of its kind in the world.

#### Ohio Hospital for Epileptics, Gallipolis, Ohio

Epileptics are committed to this institution by the Probate Judges of Ohio, a similar form of commitment being used as in ordinary insane. The inmate population of the Gallipolis institution in 1914 was 1,529; females 714—males 615. The per capita cost was \$160. The recovery rate was reported as 1 1/10 per cent. Recoveries are based on the absence of seizures during a period of two years or more. Twenty-three per cent of the entire number of patients admitted since the opening of the institution in 1892 gave a history of epilepsy or insanity in the family. It may be of interest to know that Ohio was the first State to establish a separate institution for epileptics. Conservative estimates indicate that there are 250,000 epileptics in the United States, a ratio of 1 to 400.

*The Rose Building, Cleveland, Ohio.*

---

**The Tar Heel State's Live Health Department.**—Among the most welcome of our exchanges is the *Monthly Bulletin* of the North Carolina State Board of Health, a publication which frequently serves as the source of popular health items for our own leaflets. We have just received some samples of health placards which the State Board of Health is sending up and down the Tar Heel State. One shows in graphic form how Typhoid Fever is Spread and How it is Prevented; another deals with Flies as Carriers of Disease; still another is the spitting placard: "If you spit on the floor at home, spit on the floor here. We want you to feel perfectly at home." The letter accompanying the placard says: "Of course there is nothing 'patented' about them, so if you care for anything in them, help yourself. The cuts are also available to our friends."

The placards are pleasing to the eye, the information is accurate and the advice sound. Altogether they should do much to promote the health of the communities where they are displayed.

---

**Favus.**—J. E. Lane, New Haven, Conn. (*Journal A. M. A.*, Oct. 16, 1915), says that while favus is not uncommon in this country, an impression prevails among many physicians that cases are likely to be found only among immigrants. He reports two families in which it was present among a number of young children born in this country, though the parents were from Italy. He urges that favus be made a reportable disease, as in such cases as he reports the children are excluded from school, and therefore unable to get an education, and that each case should be properly treated as soon as it is discovered.

## TREATMENT FOR CRIPPLED CHILDREN AT RAINBOW HOSPITAL, CLEVELAND

By ARVILLA PATTON, R. N., Superintendent

The Rainbow Hospital for Crippled and Convalescent Children is situated at South Euclid, a suburb of Cleveland. Since the completion of its new hospital building it has enjoyed the most modern equipment in its surgery, examining rooms, sleeping porches, isolation ward and comfortable living quarters for the staff in charge. Two other buildings are made use of, one for sleeping dormitory and play-room for the active convalescents and the other for a school-room. These three buildings are ideally situated on a fine open piece of country—thirteen acres in extent—with playgrounds and garden spaces for both flowers and vegetables.



The Resident Staff of the Hospital numbers thirty, including Superintendent, Fourth Year Medical Student, Members of a Training School for Nursery Maids, and a Training School for Pupil Nurses—and service corps.

The Visiting Staff numbers ten physicians, giving advice and treatment in the following departments of medicine: Two in General Medicine, two in Orthopedics, one each in General Surgery, Ear, Nose and Throat, Eye, Skin, and Dentistry. There are also two Consultants, whose services are always available to the Hospital.

The work done is almost entirely a philanthropic one, as the support of the Hospital is dependent upon the endowment and



charitable contributions of its friends. The Hospital can accommodate occupants for 65 beds in the Winter season and from 85 to 90 during the Summer.



The children are admitted from the ages of two years to thirteen, and in the cases accepted for treatment, preference is

given to patients with bone tuberculosis, tuberculosis of the spine, hip, knee; also cases of osteomyelitis, rickets, leg and bone deformities, chronic arthritis and infantile paralysis. Many of these cases require long and continued treatment to correct and to prevent deformities.

The medical cases consist of chorea, acute articular rheumatism, rheumatic heart disease, malnutrition, rachitis and chronic skin diseases. The eye cases consist of corneal ulcers, simple and tuberculous conjunctivitis. Weekly visits are made by a dentist, and special attention is given the care of the teeth.

As soon as the children are able to leave the Hospital, they are removed to the Convalescent building, where they are kept under observation until deemed in a fit condition to go home.

For the more active convalescents the Hospital provides a school with teacher and vocational workers to train the minds and hands. Instruction is given from the same text-books as are used in the Cleveland Public Schools, thereby enabling the children when possible to enter grades with those of their own age.

The vocational work creates much enthusiasm and some originality. This is shown in the basket weaving, carpentry work, charcoal drawings and sewing. The evolution of a bird-house, of course, is soul satisfying to the little carpenter, but even the smallest and most helpless find something they can do.

When the patients are discharged, they are followed into their homes by the Visiting Nurses especially trained for this work. The mothers are shown the best way to care for them, notified when to take them to the Dispensary for examination, and when the children are able, arrangements are made for them to attend the Cripple School.

During the summer months all crippled children wearing apparatus are permitted to return to the Hospital for at least a two weeks' outing, and for a longer time if necessary to give them a fresh start for the long hard winter.

Regardless of their physical disabilities, a happier group of children can rarely be seen than this little colony at Rainbow Hospital.

---



**THE HOSPITAL AND THE PUBLIC POCKET BOOK**

By ELWOOD STREET, Assistant Secretary, Cleveland Federation for  
Charity and Philanthropy

What claim has the hospital on the community for a part of its current expenses? It is a question often asked by Cleveland's average citizen, who is annually expected to pay approximately \$150,000 to help support the city's hospitals. It is a question that is entitled to an answer; for modern philanthropy declares that "the gift without the giver is bare," and that the donor is entitled to the fullest possible information as to the basis for any need which he helps meet.

Probably one-fourth of the expenses of Cleveland's public hospitals, so-called because they receive patients without distinction as to "race, religion, or previous condition of servitude," is paid from contributions. The only exact figures at hand show that seven general hospitals, two maternity hospitals, one for babies, one for crippled children, and a maternity dispensary, all members of the Federation for Charity and Philanthropy, present combined budgets of \$440,000 for the current year, and desire \$114,000 in contributions from the public. This request, representing the difference between income for service and income from endowments, etc., and the actual expense of the service rendered, is based upon several considerations.

In the first place, it is necessary merely from the point of view of human sympathy, that the community provide some place where those in need of medical or surgical or nursing care, may go, whatever their condition in life. From time immemorial hospitals have esteemed it their first duty to relieve suffering. It is pitifully true that the poorer a man is, the more subject he is to accident and disease. Obviously, a hospital which takes all comers must care for many people unable to pay the full cost of their care.

The city, it may be argued, should do this. The city is advancing toward such an ideal, but by no means has facilities for handling all "charity" cases. In the meantime, those in suffering must be cared for.

In the second place, the community cannot afford to have in its midst the wrecks which modern conditions produce. The sick, the injured, the maimed, must be put in shape, as soon as possible, to resume their proper places as producers of the nation's wealth. The community cannot afford not to have them cared for.

In the third place, it is to the personal interest of each member of the community that the hospital take all cases that come to it. Facilities for handling unusual cases and the training that doctors get in their treatment mean better care for the average citizen if ever he needs a doctor or a hospital.

Yet, the securing of contributions from the community by public hospitals should not be unqualified.

The donor has the right to know that he is not giving a disproportionate share of the hospital's expenses. He should have the assurance that the hospital is not shiftlessly charging difficult collections to charity or is lax in charging and presenting bills for those able to pay; that the hospital, through lack of knowledge of the financial condition of its patients, is not preyed upon by tricksters; that the hospital charges adequately for the services it renders, and does not lose money on patients who would be willing to pay roundly for similar accommodations and attention in a hotel, on a pleasure tour; and that the hospital is only caring for those charity cases which cannot be referred to the city hospitals, which the contributor already is supporting through his taxes.

In duty to the donor, too, the hospital should make sure that its reports of services rendered and of finance are clearly understandable and are couched in such form that they can be readily compared with the statements of other hospitals. It is hardly fair to ask the citizen to give sympathetically, without allowing him to give with an intelligent knowledge of the community's hospital services and needs.

Such a warning is, of course, hardly necessary to Cleveland hospitals, which, from the mere fact of their steadily growing income from contributions and their increasing number of givers, give ample evidence of deserved sympathy and understanding. Serving the requirements of the individual needing their care and of the community at large, they may well stand as among the most fundamental of our philanthropies.

---



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902.

Capital Stock, \$6,000

---

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH F. STONE  
2318 PROSPECT AVENUE

## ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.  
ROGER G. PERKINS, M. D.

JOHN PHILLIPS, M. B.  
T. WINGATE TODD, F. R. C. S.

## COLLABORATORS

C. E. FORD, M. D.  
H. E. HANDERSON, M. D.  
S. W. KELLY, M. D.  
J. J. R. MACLEOD, M. D.

DAVID MARINE, M. D.  
V. C. ROWLAND, M. D.  
H. L. SANFORD, M. D.  
TORALD SOLLMANN, M. D.

G. N. STEWART, M. D.

## EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.  
*Vice-President*, C. E. BRIGGS, M. D.

*Secretary*, C. A. HAMANN, M. D.  
*Treasurer*, H. G. SHERMAN, M. D.

## BOARD OF DIRECTORS

C. E. BRIGGS, M. D.  
F. E. BUNTS, M. D.  
G. W. CRILE, M. D.

C. A. HAMANN, M. D.  
C. F. HOOVER, M. D.  
S. H. LARGE, M. D.  
J. B. MCGEE, M. D.

J. P. SAWYER, M. D.  
H. G. SHERMAN, M. D.  
W. H. WEIR, M. D.

---

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

---

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

---

## EDITORIAL

### THE DUDLEY P. ALLEN MEDICAL ENDOWMENTS

Communities are most fortunate when in them dwell and work men of high ideals and perceptions, with accurate information and energy to work towards the ideals they hold.

Every such man enriches the lives of those about him and not alone of those in immediate relation to himself, but in far wider circles none fail of some benefit from the activities of these rare leaders with whom they may never have come into personal acquaintance.

Throughout the years in which Cleveland has been so mar-

velously adding to its population, it has been favored with the professional and personal labors of a surgeon from whose attainments and leadership his colleagues and the community have gained immeasurably. To very few has it fallen to pass through life leaving an impress upon their homes and their fellows as did Dr. Dudley P. Allen. As a profession we are proud to have had such energy and efficiency devoted for long years to the daily routine of our calling.

While in the full tide of his remarkably successful career, he undertook to enlist the aid of all who would join him to establish a Medical Library, to improve conditions of professional life especially for the younger men, and through them to extend a better professional service to the whole community. Those who knew him best know well how great was his solicitude for the well-being and well-doing of the whole professional body, and with what enthusiasm he appreciated any good professional achievement. To him the demonstration of efficiency by any younger colleague was a delight, hailed as a promise of what he longed to foster, an increasing professional efficiency. This interested enthusiasm never flagged, and while his recent years were more largely given to travel, and to art in which he had long had great interest and accomplishment as avocation, he was steadfastly a member of the profession to which his years of greatest activity had been devoted.

With such feeling and such hopes, it was with much satisfaction that he saw the practical success of the Cleveland Medical Library. The united efforts of the other supporters of the enterprise would have fallen far short of the actual accomplishment without his constant aid and counsel, but he welcomed every effort and every member into full partnership and regarded the success as a common achievement.

That from this means of professional betterment and community benefit he hoped much, and in it trusted much, is to be seen from his establishment of the fund which bears his name.

It is unusual for men to render such large personal service, and most unusual that they can so emphasize and perpetuate their good works. In making this largest single legacy to the Medical Library, he has given to the public and to his colleagues not only the means to greatly enlarge and intensify this work of which he was the inspirer and leader, but has laid a trust upon the Association which must further inspire its endeavors to serve directly the profession and through it the public which the profession serves.



Convinced that from the nature of a Library's work it should be free of dependence upon other organizations, and that it should be kept apart from considerations other than the efficient use of its resources Doctor Allen provided in his foundation that the Association must be independent and free from possible outside influences which might some time in some way, detract from its efficiency. In this provision we see again, his far-sightedness and singleness of purpose. Two hundred thousand dollars in trust whose income must go to strictly Library purposes thus provides for the profession a remarkable aid in its development, and calls upon it for an increased scholarship and practical efficiency, in whose achievement the deeds and spirit of the donor may well be an example to those whom he sought to aid by his most generous provision.

While thus he looked into the future to aid the coming profession whose members must be unknown to him, he also made a gift for the determination of which we must look back upon the early years of toil through which he passed in acquiring the experience on which his critical faculties rose to their professional development.

In Charity Hospital he found the field where his younger efforts were largely spent, and throughout his life he cherished the associations there formed; and the sympathetic aid of the Sisters in overcoming the difficulties necessarily met, was to him always a most pleasant recollection.

While giving most generously toward the construction of the new building it was a peculiarly beautiful instance of the fully developed man bestowing kindly aid in a field of his young-man's labors that we may see in the provision by Doctor Allen that twenty-five thousand dollars should be placed at the disposal of his successors, the present surgeons of the Hospital, for the operating rooms and other surgical equipment of the new wing.

There are many examples of men who have succeeded, returning to their Alma Maters some substantial aid toward increased facilities or endowment, but far and wide must our profession seek so forceful an instance of a great ideal pursued with clear vision to so great an accomplishment, and so fine an instance of affectionate remembrance of the early field of effort in which seedling powers developed to their mature yield of accomplishment.

---

## DEVELOPMENT OF PUBLIC WELFARE WORK IN CLEVELAND

*Co-operation* in medical administration has long been preceded by co-operation in organized charities, and the economic advantages have clearly indicated that the risk was minimal in proportion to the benefits. This sequence is only another of the instances in which medicine has lagged behind. In each of the papers in this issue and the one following, however, there is some form of co-operation touched upon, but even more striking than this is the appreciation that the efforts of the individual group are only a part of the whole problem, and must fail of success by just so much as they fail to grasp this fact. There is also a marked change of tone in the discussions of the ultimate results of the activities under consideration. Where formerly the main desire was the cure of as high a per cent of the individual cases as possible, a cure meaning the discharge of the patient as convalescent, now the keynote is *prevention*. This is most prominent in the attitude of the hospitals, no longer content to close the patient's record with discharge, but striving to follow him home to insure that he is not a menace to the community and that he is as nearly as possible capable of self support.

It is clear that in public health matters co-operation and prevention go hand in hand. Everywhere the legacy of the past has put burdens on us which require enormous expenditures for their removal. Everywhere people are waking up to the value of health as a financial asset, and are demanding more health activities from the dispensers of the tax funds. Everything then that lowers the cost of administration, that frees capital and gifts for further efforts is disproportionately valuable, and it is in this connection that the co-operation of the private agencies with the public activities is able to obtain great results. An excellent example of this is well brought out in the accounts of the efforts to reduce tuberculosis. The amount of money necessary to carry on the affairs of a large municipality even under the most economical management is so large that decision as to which of the crying needs of the community shall first be taken up is often difficult. In spite of the increasing sentiment in favor of public health work, it is this section which has the hardest time to get funds, at least in amounts sufficient to institute new activities. It is, however, comparatively easy to get funds to carry on a work which has been shown to be successful,



and it is here that outside help is most valuable. In pursuance of this idea the private anti-tuberculosis agencies have been able to establish machinery for the prevention of the disease, or constructive methods for the improving of the condition of the suffering, and have then turned over the going concern to the city, which is able to carry it on and even expand it, though it would have been almost impossible to institute it from the beginning. This, of course, frees for the originators the money used in running expenses, and frees also the time of the individuals, so that their energies can be concentrated on something new, which when developed can itself be turned over to the city. This plan is being followed by other agencies and so far with success. The objection is that the history of politics, and even of politics in Cleveland, shows that city administrations may not be without reproach, and one must frankly accept this fact. On the other hand, one must also accept the fact that the politician for obvious reasons desires to give the people the character of government they want, and unless there is a marked change in the trend of sentiment it will be increasingly difficult to interfere with the promotion of the public health.

Moreover, if the municipal administration is in any degree adequate, there can be no question of its superior powers of collecting and collating information, and it is on such information that the entire foundation of advance in scientific administration must rest. Through morbidity and mortality reports the hospitals and other philanthropic agencies can determine what forms of activity are most necessary, and can see where the municipality needs most aid and most stimulation. Granting this to be true, it is clear that in the interests of economy it is the duty of all private philanthropic agencies to stimulate and crystallize the public sentiment to demand an ever improving efficiency in public health matters. Incidentally there is perhaps no group of workers, with the exception of organized labor, which can wield as great an influence in this direction.

This same line of reasoning may also aid us to avoid a very real danger. While in truly mechanical work, dealing with inanimate matters, the development of specialization to its logical conclusion may be profitable, at least from a financial standpoint, yet wherever the human element is to be considered there is marked danger of its over-development. If the social and medical workers along their different lines are able to see and appre-

ciate only their special field, they may be efficient in this, and their work may be valuable from a statistical standpoint, but unless the field is comparatively wide, we will have the old difficulty of forcing a number of agents into contact with each individual case. Wherever then there can be developed a system which reduces the number of agents coming into contact with a particular case to a minimum, and which keeps each agent in a state of mind which sees all sides and correlates them, we find a distinct advance. The attempts in Cleveland to arrange the districts so that one person can cover in a small area the same points that formerly were the duty of several persons in a larger area of which this forms part, have already been shown to be an economy in time, labor and expense. The reduction of distances between cases, the possibility of knowledge of the characteristics of the district, and the reduction of the number of visitors to the individual home, have already justified the attempt, which will be extended as fast as possible. It must, of course, be kept in mind that while over-specialization is a mistake, yet it is also a mistake to give so wide a range of activities to an individual that confusion results, but the basic similarity of the various reasons for visits in the medical, social, public and private health work is so marked that there appears to be little danger of this.

R. G. P.

---

## TWO WELFARE ISSUES OF THE JOURNAL

We are glad to announce that papers contributed for our delayed October issue devoted to Public Welfare are so many that we have decided to publish these contributions in two numbers of the *Journal*, and will therefore devote the November issue (following in a few days) to this same general subject.

The October issue contains the matter pertaining to those agencies engaged in the care and treatment of the Sick. The November number will be given over largely to those agencies engaged in the Protection of Health.

---



## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. McGEE, M. D., Cleveland

**Digitalis and Caffein:** In the *American Journal of Medical Sciences* for September, Wilfred M. Barton reports upon the removal by caffein of some arrhythmias produced by digitalis. When digitalis is administered in cases of heart failure, in which the auricles are fibrillating, the gross irregularity of the ventricle observed in this condition is not materially lessened, although, as is well known, the rate of the heart beat is greatly slowed, and the subjective symptoms are often magically ameliorated. In cases of heart failure in which the rhythm is normal, digitalis slows the pulse only moderately, and what is of considerable interest, tends often to induce irregularities of several different kinds, chief of which are premature contraction and heart block. He has observed in several instances of marked heart failure after prolonged use of digitalis, the appearance of diastolic murmurs, and when this diastolic murmur is unaccompanied by pulsus alternans, it is removed by caffein. Digitalis is known to slow the heart rate, while caffein accelerates it. Caffein tends to raise the irritability of the conduction system; the effect of caffein then, theoretically, neutralizes or possibly overcomes the effects of digitalis upon the heart. His investigations have tended to show that the cardiac effects of digitalis, particularly in respect to interference with conduction, are quickly overcome by caffein. For some time he has observed the effects of caffein in cases which showed digitalis arrhythmias and reports seven cases showing that the theoretical considerations are borne out by the facts. Digitalis irregularities will usually cease spontaneously if the drug is stopped, but sometimes instances arise in which, unfortunately, the drug has been prolonged in its administration until the toxic effects upon the conducting system are only too manifest, and in these the administration of caffein will do good. He has seen block removed by caffein at times even while digitalis was being taken, and he believes that the conductivity of the bundle of His.

His conclusions are: All the irregularities of the heart beat which are brought about by digitalis tend to be removed by caffein, although in many cases digitalis arrhythmia will spontaneously disappear when the drug is stopped; instances arise, unfortunately too common in which after prolonged digitalis administration, the conductive system is so depressed that serious results may arise. Under these circumstances, the administration of caffein will be of service, and therefore strongly indicated. The action appears to be due to the increase in irritability of the conduction system produced by the caffein, which antagonizes and finally overcomes the depressing effects which digitalis exerts upon the auriculo-ventricular bundle.

**The Heart:** H. A. Hare, in the October number of the *Therapeutic Gazette*, considers the treatment of the heart in and after acute infections. He thinks there can be no doubt that we are prone to institute cardiac treatment too often and too vigorously during the course of an acute infectious disease and notably so in pneumonia and typhoid fever. In both of these conditions medical men naturally dread failure of this important vital organ, and often expect the heart to do more work than nature intends it to do under the conditions which are present. We listen to the first sound of the heart, or feel the pulse, and conclude that neither is as vigorous as we would like to have it. This decision is largely due to our anxiety, but in many instances the seeming lack of power is that condition which would be present in anyone who is lying at rest in bed for some time and who is to some extent but not dangerously depressed by the presence in his system of disease. In the treatment of cardiac conditions, arising during the course of acute illness, it may be essential from time to time to administer stimulants, or supportants but only on the rarest occasions is it necessary to administer them all the time, and by so doing force the heart and

nervous system to disengage an amount of energy which might well be saved for the combat in the later stages of the disease. Everyone, he thinks, can recollect cases in which having once commenced to administer cardiovascular stimulants we have continued them day after day, when if they had been skilfully administered in a few doses, they would have accomplished all that we sought. As a matter of fact, the cardiovascular stimulants that are to be used during the acute infections are very few, and probably none of them are capable of producing more than a temporary effect that is advantageous.

If we consider digitalis as the best cardiovascular stimulant that we have, we at once recognize the fact that digitalis is unable to slow the heart materially during fever, because fever prevents it from affecting the vagus nerves; and, again, when the heart muscle is suffering from the effects of the toxemia induced by the disease it is notoriously a fact that digitalis fails to act favorably on such a muscle, either because the toxins of the disease are stronger than it is, or because changes have taken place in the function or organic constitution of the heart muscle which prevent or pervert the action of the drug. The proposition in such cases is entirely different from the use of this drug in ruptured compensation, when a large part of the cardiac failure may be due to fatigue rather than to organic change.

Much as he regrets to state it, he has as little confidence in the value of digitalis when used continually in these cases, as he has confidence in its value when so employed in instances of ruptured compensation. What he says concerning digitalis also holds true in regard to strophanthus. He believes these drugs, if used at all, had better be given in a few large doses by means of which we can answer the question as to whether they are going to exercise an advantageous influence. If small, timid doses are used, and no effects accrue, we will be undecided as to whether the lack of results is due to the size of the dose, the weakness of the drug, or the condition of the heart. If these drugs are used constantly they are prone to lose their effect, and do damage by being employed when they are not needed, and so do not act when they are needed. So, too, he thinks that in most instances we are prone to use strychnine too incessantly. He has always taught that strychnine should be regarded not as a direct cardiac stimulant, but a remedy which, by stimulating the nervous system, wakes it up and so indirectly increases the cardiac and respiratory tone.

This is not strictly accurate, for he believes strychnine does have a direct effect upon the heart, although less than some people think; he is quite confident that the use of strychnine is like the use of a whip when driving a horse; it is not to be employed all the time; it is not to be used without clear indications for its employment; and when it is used, it is to be used sufficiently vigorously for a short time to produce an effect. He strongly advocates keeping strychnine in reserve, and only employ it when some sharp lapse of the circulation or nervous system seems about to occur or has occurred, and this holds true of the more rapidly acting diffusible stimulants, like aromatic spirits of ammonia, or Hoffman's anodyne, which if their influence is to be maintained have to be given so often that the stomach rebels. He has often seen nitroglycerin used in combination with strychnine, and has been told that it was given to combat circulatory failure. He has for years tried to discover where this widespread delusion had its origin. The nitrites are not stimulants, but relaxants, or sedatives, and the use of nitroglycerin combined with strychnine consists in the administration of a remedy which relaxes the blood vessels, possibly diminishes the power of the heart, and depresses the motor nervous system at the same time that the strychnine is used to promote a diametrically opposite effect upon all these parts. As to alcohol, it is sufficient to state that physicians for generations have considered that the use of alcohol, certainly in exhausting diseases characterized by great exhaustion was distinctly advantageous. We know that it maintains the patient's nutrition and prevents wasting, provided, of course, that it is given in the proper dose, at the proper time.



**Infantile Eczema:** H. W. Cheney, in the *New York Medical Journal* for October 2nd, asserts that the consideration of infantile eczema is a pediatric question, and not a dermatological one. He believes that infantile eczema is principally a nutritional disorder, and that in the great majority of cases the skin eruption is only the external evidence of a disordered metabolism. Many of the textbooks on skin diseases, or on eczema in children, give scant consideration to the nutritional side of the question, and a discussion of the question at a dermatological society meeting was almost entirely given over to external treatment of the disease, and only a short statement that disorders of nutrition might be a contributing cause. When we say that eczema in the infant is due to digestive disorders, we have not gone far enough, for we find that usually there has not been a marked upset in digestion, such as is ordinarily manifested by vomiting and diarrhea. But when we study these cases closely we find that most of them are due to *over-feeding*. Either the total quantity of food is much too large or some of its ingredients, either the sugar or the fat, is in excess, or the child may have an idiosyncrasy, or an intolerance for the sugar or the fat or the salts of the food. As to treatment, he insists that external applications are not to be considered first. If it is a breast-fed baby, we often find it has been fed at frequent and irregular intervals, perhaps every two hours, and the mother has an oversupply of rich milk. For such a baby we must endeavor to do two things; first, decrease the abundance and richness of the mother's milk, and, second cut down the baby's supply. For the mother we should advise more exercise and a lessening of her quantity of food, especially milk, cream and the cereals. For the baby we should prescribe regularity of nursing and long intervals between feedings. The baby should not be nursed oftener than once in four hours, and not allowed to stay at the breast too long. The food can be diluted by giving the baby one or two ounces of water or barley water just before each nursing, and thus it will not take so great a quantity of milk. For the bottle-fed baby we are enabled to vary the food constituents to suit each case. We shall find that most of them have been fed too much fat, due to the practice of using the top milk for the baby's food, or of adding cream to the milk mixture. The simple expedient of feeding a skimmed milk mixture for a time will often cure them. In other cases, especially those with eczema, and excoriations of the buttocks, we find the carbohydrates have been fed in excess, perhaps one of the patent baby foods used too generously, or with too much sugar in the mixture. In these cases, also, the skimmed milk mixtures with no carbohydrates added are good for a time changing to whole milk later. Externally no soap and very little water should be used. Cold cream or sweet oil can be used for cleansing purposes. Bland and mildly antiseptic ointments are useful, and splints on the arms, if necessary, to prevent scratching. In conclusion, he emphasizes these points:

(1) Infantile eczema in the majority of cases is the evidence of a toxemia, intestinal in origin.

(2) Such cases require primarily the services of a pediatricist to oversee the feeding and only secondarily advice as to external medication.

---

**Arteriosclerosis:** In the *Medical Record* for October 9, Louis Faugeres Bishop treats of cardio-vascular renal disease (arteriosclerosis). An examination of the histories of many hundreds of people suffering from arteriosclerosis has shown in a majority of cases a record of a sensitizing event. This may have been a severe illness from an infectious disease particularly typhoid fever, chronic appendicitis, a period of great nervous strain, or some acute food poisoning. It seems to be a fact that up to the point in the history of these individuals where proteins were badly borne, the latter had been harmless, while from the time that they became harmful they were very harmful

indeed, and resulted in cellular destruction, with the replacement of the destroyed cells by connective tissue, resulting in the deterioration of organs. Founded on these hypotheses he has become a profound believer in the value of dietetics in the management of this condition, and an earnest advocate of those general hygienic measures, rest and exercise, and hydrotherapeutics, which influence the process of metabolism. Our treatment must be directed to the underlying cause, namely, the disturbance of metabolism. As this disturbance consists in a majority of instances in a loss of tolerance of the cells to particular proteins, and as it does not make much difference in the field of nutrition what protein is used, it is a simple matter in theory to supply the necessary nitrogenous food by a single safe protein. Experience has shown that this safe protein is found in milk, which is the only protein provided by nature exclusively for food purposes. His experience leads him to believe that practically all well advanced cardiovascular renal sufferers are sensitive to meat proteins; that nearly all are sensitive to fish proteins; and that a large part are sensitive to egg proteins. The single exception seems to be with the flesh of fowl, which is tolerated by many who cannot tolerate meat or fish. In treatment we must primarily treat the disturbed metabolism by cutting off the source of irritation in proteins to which the individual is sensitive, by a diet to which he has given the name of "the few-protein diet," because it implies the complete elimination of irritating proteins rather than their diminution, the recognition of exercise as the best cellular and organic stimulant, and the use of castor oil as the best single remedy. The great enemy of the cardiovascular-renal patient is the supposed specific, whether it be electricity, radium, some fantastic combination of salts, or latest fashionable combination of iodine. The road to restored health is rugged and beset with discouragements, but the comfortable byway offered by the supposed specific has led to the subtraction of many years of life from persons who have been so unfortunate as to rely on them to the neglect of the essentials of treatment.

---

**Respiratory Inflammations:** The *Medical Council* for November presents editorially some don'ts in the treatment of upper respiratory inflammations. Don't debilitate the patient with a lot of depressing antipyretics. Don't "dope" him with a heavy dosage of the usual unscientific coryza formulae. Don't tie up his secretions. Don't derange his stomach with so-called cough syrups. Don't forget to look out for diphtheria or one of the exanthems. Don't forget prophylactic inoculation of all exposed persons in such cases as result in diphtheria. Don't forget to isolate any suspicious case; the face getting pale or ashy and the lips losing color may be sufficient sign of impending danger. Don't allow an oil stove in the patient's room. Don't oppress the chest with unduly heavy applications. Don't forget to watch the case for any impending complications. Don't forget that oil sprays are less apt to lead to extension of purulent inflammation than are aqueous ones. Don't forget that atropine is contraindicated when secretion is viscid or tenacious, ammonium chloride then being indicated. Don't neglect a culture in cases where diagnosis is uncertain. Don't forget that iced compresses to the throat do a world of good. Don't forget to give plenty of water. Don't allow food which is hard to swallow. Don't forget that salicylate is of marked value when articular symptoms begin, when follicular tonsillitis seems impending, and in many cases fever; give enough to bring results, but watch the heart. Don't call everything "grippe." Don't forget to keep the nasal passages free, especially in children. Before leaving case, don't forget to analyze the urine if any suspicion of renal involvement. Don't allow marked dryness of air in patient's room. Don't allow patient to talk much. Don't overdo expectorants, especially in acute stage. If the case becomes chronic, especially in bronchitis, don't give narcotics, especially if it can be avoided.

---



## NEW AND NONOFFICIAL REMEDIES

During October the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

## Mallinckrodt Chemical Works:

Betanaphthyl Salicylate, M. C. W.

## Merck &amp; Co.:

Betol.

Bismuth Tribromphenate, Merck.

Butylchloral Hydrate, Merck.

Ethyl Bromide, Merck.

Homatropine Hydrochloride, Merck.

Sodium Cacodylate, Merck.

## H. K. Mulford Co.:

Hay Fever Vaccine, Mulford: 4-syringe packages (0.0025 mg., 0.005 mg., 0.01 mg. and 0.02 mg.), and 1-syringe packages (0.02 mg.).

## Merck &amp; Co.:

The Council has recognized Merck & Co. as selling agent for the products of Knoll & Co., described in New and Non-official Remedies.

The Council has also recognized Merck & Co. as selling agent for Kelene.

## Heyden Chemical Works:

Betol: Having been advised by the Heyden Chemical Works that Betol is no longer offered for sale the Council voted that it be omitted from New and Nonofficial Remedies.

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies."

Mercurialized Serum, Mulford—A solution of mercuric chloride in normal horse serum diluted with physiologic sodium chloride solution. It is proposed for the treatment of syphilis, particularly the cerebrospinal type. It is supplied as:

Mercurialized Serum, Mulford, No. 1—One 30 Cc. ampule containing the equivalent of 1.3 mg. (1/50 gr.) mercuric chloride with rubber tube and intraspinal needle.

Mercurialized Serum, Mulford, No. 2—One 30 Cc. ampule containing the equivalent of 2.6 mg. (1/25 gr.) of mercuric chloride with rubber tube and intraspinal needle.

Mercurialized Serum, Mulford, No. 3—A package of ten 30 Cc. ampules each containing the equivalent of 1.3 mg. (1/50 gr.) of mercuric chloride with rubber tube and intraspinal needle.

Mercurialized Serum, Mulford, No. 4—A package of ten 30 Cc. ampules each containing 2.6 mg. (1/25 gr.) mercuric chloride with rubber tube and intraspinal needle.

Mercurialized Serum, Mulford, No. 5—8 Cc. mercurialized serum, Mulford, containing the equivalent of 22 mg. (1/3 gr.) of mercuric chloride in a syringe graduated in fourths, with needle.

Mercurialized Serum, Mulford, No. 6—A package of ten syringes, each containing 8 Cc. liquid which represents 22 mg. (1/3 gr.) of mercuric chloride. H. K. Mulford Company, Philadelphia, Pa. (*Jour. A. M. A.*, Oct. 2, 1915, p. 1185).

Radio-Rem. Outfit No. 4—An apparatus designed for the production of radio-active drinking water by the action of radium sulphate contained in terra cotta plates. It consists of two plates contained in

250 Cc. bottles; when the bottles are filled with water the two plates impart about 1.8 microcurie (5000 Mache Units) to the water in twenty-four hours. For action, uses and dosage refer to the article on radium in *New and Nonofficial Remedies*. Schieffelin & Co., New York (*Jour. A. M. A.*, Oct. 9, 1915, p. 1281).

**Histamine Hydrochloride**—The hydrochloride of the base beta-aminazolyethylamine (histamine). It is a valuable reagent for the standardization of pituitary preparations.

**Imido, Roche**—A name applied to histamine hydrochlorid.

**Ampules Imido, Roche**—Each ampule contains 1.1 Cc. of an aqueous 1 in 1000 solution of Imido, Roche (1 Cc. contains 1 mg.). Hoffman-LaRoche Chemical Works, New York City (*Jour. A. M. A.*, Oct. 16, 1915 p. 1367).

**Betanaphthyl Salicylate**—The salicylic acid ester of betanaphthol. It passes the stomach unchanged, but is split into its constituents in the intestinal tract. It is believed to act as an intestinal antiseptic and to act in a similar way in the bladder. It is said to be useful in intestinal fermentation, catarrh of the bladder, rheumatism, etc. Mallinckrodt Chemical Works, St. Louis, Mo. (*Jour. A. M. A.*, Oct. 30, 1915, p. 1553).

**Betol**—A name applied to Betanaphthyl salicylate (which see). Merck & Co., New York (*Jour. A. M. A.*, Oct. 30, 1915, p. 1553).

---

**Hospital Noises.**—"The inhabitant of a large community who is without the experience of a temporary residence in one of its hospitals feels a sort of humanitarian pride in the now familiar signs, 'Hospital Street—Make No Unnecessary Noise!' A brief stay in some of these institutions is sometimes sufficient to convince one, however, that the faults of others often seem more patent than our own which are nearer at hand. This applies all too often in particular to the subject of hospital noises, which, unfortunately, have not yet everywhere received the degree of consideration and correction which they demand. Few persons who have not given serious thought to the matter will realize the endless sources of noise, which is never soothing to a patient, and not infrequently is the occasion of intense psychic irritation to even the most docile inmate of a municipal health institution. Dr. Byam Hallings of the Massachusetts General Hospital has recently pointed out some of the unappreciated noise factors, which will be recalled by the initiated through the mere mention of a word or two. Doors and elevators are rarely noiseless; windows and floors may creak and reverberate; chairs and ward utensils are famed for squeaks and rattles; the slam of dishes is rarely soothing, and the sound of bells and buzzers never reach an immune auditor. To all of these and many other varied disturbances must be added the multitude of sounds and noises which are traceable to the human element—nurses, orderlies, porters, employees, visitors, physicians and patients themselves. Dr. Hallings reports that in a routine day more than 3,500 persons passed through a doorway in the main corridor of one of the buildings of the Boston hospital. It is thus easy to see how noise can be created. How to minimize it is a timely problem in every institution," says *The Journal of the American Medical Association*.

---

**The Committee on Obstetrics of the American Association for Study and Prevention of Infant Mortality** has issued a leaflet entitled "Motherhood." It contains in very brief compass much practical advice and information for the prospective mother, together with a list of necessary things for the baby. Copies of this may be obtained from the headquarters of the Association, 1211 Cathedral street, Baltimore, Md.

---



## BOOK REVIEWS

**A Text-Book of Pathology.** By Alfred Stengel, M. D., Sc. D., Professor of Medicine, University of Pennsylvania, and Herbert Fox, M. D., Director of the Pepper Laboratory of Clinical Medicine, University of Pennsylvania, Pathologist to the Philadelphia Zoological Garden.

Sixth Edition. 1045 pages, 468 text illustrations, and 15 colored plates. W. B. Saunders Co., Philadelphia and London, 1915. Price, Cloth, \$6.00 net; Half Morocco, \$7.50 net.

The book in its present form presents a great improvement of the text book which has been familiar for nearly 20 years. The collaboration of Dr. Fox is particularly fortunate because of his wide experience in human and comparative pathology and bacteriology in their most modern form.

In the preparation of this edition the authors very wisely omitted the section on Technic, a subject which should be considered in special volumes. The section on Neuropathology has been curtailed so as to bring its consideration into proper proportions for this book. The subject of General Pathology has been subjected to extensive revision, a new chapter on Transmissible Diseases has been added as well as separate chapters for Teratology, for the glands of internal secretion, and for a brief consideration of the pathology of the eye, ear and skin.

The printing is clear, the illustrations numerous and the mechanical features of the book excellent in every way.

General Pathology occupies 411 pages and Special Pathology occupies 597 pages. The book throughout is well balanced in the consideration of the numerous topics included, perhaps too numerous, for this completeness necessitates brief consideration of important topics particularly in the field of special pathology, as for example in the discussion of diseases of the kidney. In General Pathology the reviewer regrets lack of finer detail in description of tumors, more particularly in tumors which have been studied in recent years as the neurocytoma and the rhabdomyoma. The discussion of diseases due to bacteria and protozoa as well as the higher vegetable and animal parasites is excellent but the grouping of beri-beri and pellagra as diseases due to bacteria is at least open to some question.

Whilst pathological physiology is given a place in the consideration of many of the diseases and lesions the intimate functional relations of disease are not discussed in a truly enlightening fashion. Disorders of metabolism including gout and diabetes are dismissed in 17 pages; disorders of the transmission bundles of the heart occupy one quarter page and angina pectoris one half page. In general the discussion of the physiology of disease is rather abstract and not based, as in many cases is possible, on concrete dynamic physiologic experiments or upon accurate biochemical observation.

Most of the illustrations are good, some are extremely beautiful and yet others fail to illustrate as for example figures 331 and 332, photomicrographs of cases of acute nephritis.

Notwithstanding these criticisms the present edition of Stengel and Fox is a vast improvement on its predecessors. Not discursive, not critically examining controversial matters, it nevertheless gives clear and accurate statements of the causes, nature and effects of disease. It can be highly recommended for students and physicians. Were it not so valuable this critical review of a sixth edition would not be justified. H. T. K.

**Cancer, Its Causes and Treatment.** By L. Duncan Bulkley, A. M., M. D., Senior Physician, The New York Skin and Cancer Hospital. Paul B. Horber, New York, 1915. Price \$1.50 net.

This volume, of 230 pages is composed of six lectures in which are considered the following: The Nature of Cancer, Frequency and Geographical Distribution of Cancer, Metabolism of Cancer, Relation of diets to Cancer, and Medical Treatment of Cancer, with clinical considerations and conclusions.

Cancer has hitherto been considered almost wholly from its histological and surgical aspects, with but little reference to the diatetic and medical aspects of this increasing malady. In this book, the author has collected from a most extended literature and analyzed the evidence of the constitutional character of cancer and presents his own experience in its diatetic and medical treatment during the past thirty years, with report of cases.

The author has considered the various aspects of malignant conditions in a most thorough and painstaking way, presenting reports and statistics showing the limited occurrence of cancer in the more primitive life and its increasing ravages in civilization and modern modes of living. With the steadily increasing prevalence of cancer, the high mortality rate of those affected with over fifty thousand deaths in the United States in 1913, this contribution seems most timely and stimulating in the effort to bring about more effective methods in its control.

Strong emphasis is placed on diet in its relation to cause and control of cancer in a most convincing way and eliminates many of the most commonly considered causes.

This work is well written and well arranged, and evidently is most worthy of consideration by those having to do with this generally considered hopeless condition.

K. S. W.

---

**Operative Gynecology.** By Harry Sturgeon Crossen, M. D., F. A. C. S., Associate in Gynecology, Washington University Medical School, and Associate Gynecologist to the Barnes Hospital. Seven hundred and seventy original illustrations. C. V. Mosby Co., St. Louis, 1915. Price \$7.50.

In this new volume, Dr. Crossen presents us with a splendid companion piece to his older "Diseases of Women," which is now in its third edition and which views Gynecology from a medical standpoint. On account of this previous work, the "Operative Gynecology" is strictly surgical, no space whatever being devoted to diagnosis, pathology, etiology, drug treatment, or the like. As a result, the author has been able to condense into a single volume really wonderful descriptions and illustrations of all truly gynecological operations.

The most striking feature of the book is the superb series of original illustrations, no fewer than 770 being used. These are so accurate, clear, and well-chosen that anyone with the slightest knowledge of gynecology can follow any operation understandingly from beginning to end without a glance at the text. Operations are shown at such frequent intervals that turning the pages of the book is almost equal to viewing a moving picture film of the particular procedure.

One sometimes wonders just what place such volumes of operative methods really fill. The surgeon who undertakes a serious operation after merely looking at pictures and reading printed directions should lose his license. We all know that the only true method of learning to operate is by assisting a master surgeon during months and years of hospital work. Yet even for the competent surgeon, such a book as Dr. Crossen's has a great value. For example, the time must come to every expert gynecologist when he feels he must grit his teeth and attempt his first Wertheim hysterectomy. He may know the literature well, he may have seen the operation performed; but we know of no way he can better pass the evening before his own first effort than in a study of figures 430-488 in Dr. Crossen's book.

The volume is more, however, than a mere picture-book. The summaries of the literature and the history of gynecological operations are scholarly. For example, what problem in gynecology has produced a greater host of operations than the desire to hold forward a womb that tries to fall back? Dr. Crossen analyses and tabulates in a most scientific manner no fewer than 103 operations for retrodisplacement. Of these,



twenty are deemed of sufficient value for detailed description, and they are illustrated with ninety-three figures.

Of course one can always criticize. As long as surgeons have personality there will be those who will not agree in every case with Dr. Crossen in the particular operation he recommends for some particular indication. Again, some may wonder why the author devotes forty pages to a review of the literature on such a subject as Ovarian Transplantation, and then gives less space to such a topic as Pelvic Inflammation.

The striking features of the author's mental attitude towards his task are two. First, his lack of prejudice in favor of particular hobbies. Let us illustrate by a quotation in reference to the sterilization of the hands: "The important thing is not which method is chosen, but *how thoroughly* the chosen method is carried out." Second, his individualization of patients, and his efforts to break away from any single "classic" operation, to be used indiscriminately in all cases of a given indication.

The book appeals to us as the best presentation of the subject we have seen.

J. T. S., Jr.

---

**A Text-Book of Histology.** By Rudolph Krause, Extraordinary Professor of Anatomy at the University of Berlin. Translated from an original manuscript and printed only in the English language. 264 pages, 36 illustrations, three of which are colored. Rebman Company, New York, 1915.

This volume is an excellent review of the subject of histology, considering first the structure of the cell, next of the tissues and then of the individual organs. The style is direct and simple, the printing clear and good, but arranged in that elementary fashion which prints the main points in black faced type. The illustrations are all extremely diagrammatic and do not depict what the student actually observes under the microscope; they render more clear the text but do not encourage accurate observation. Unfortunately numerous references to the illustrations in another book of the author are frequent. It would appear to the reviewer that the work under consideration is to be regarded as a laboratory note book rather than a text book. It includes all the important points, but includes no extensive consideration of controversial matter. Its completeness, directness and simplicity are to be commended but it is of little value unless supplemented by other text and illustrations or a good collection of histologic preparations.

H. T. K.

---

**Diseases of Infants and Children.** By Henry Dwight Chapin, A. M., M. D., Professor of Diseases of Children, New York Post-Graduate Medical School and Hospital, etc., and Godfrey Roger Pisek, M. D., Sc. D., Professor of Diseases of Children and Attending Physician to the New York Post-Graduate Medical School and Hospital, etc. Third revised edition with illustrations and 12 colored plates. William Wood & Co., New York, 1915. Price \$3.25 net.

The object of this work, as expressed in the preface, is to bring the subject of Pediatrics into compact form for the student. The authors have tried to produce a work which shall occupy a position midway "between a compendium and a too exhaustive work." The object is worthy. The subject of Pediatrics is often regarded as difficult and any work which renders true and accurate knowledge of the subject more available to the beginner fills a useful place. The book under consideration gives short, clear and accurate accounts of infant hygiene, infant feeding, and of the diseases of infancy and childhood.

As with any work, a few points may not be in accord with one's own ideas. It seems as if Chap. 7, which deals with the various laboratory tests, might have been omitted and the student allowed to seek fuller directions in the books on the subject. Many with a large experience do not believe that "vaccines will cure a large per cent of these cases (acne) when the acne bacillus can be isolated." It also seems as if some modifica-

tion were necessary to the statement that, "mothers affected with tuberculosis should under no circumstances be permitted to nurse their infants."

In regard to infant feeding, the authors are to be commended, in spite of their preference for percentage feeding, for including a clear description of the caloric method.

The general impression is good. It is particularly good when the book is considered from the author's point of view—as a book for students who must have the essentials and who have but limited time in which to acquire them.

H. C. K.

**Habits That Handicap.** The menace of opium, alcohol and tobacco, and the remedy. By Charles B. Town. The Century Co., New York 1915. Price \$1.20 net, postage 10 cents.

In this volume, the author has given the expression of his opinion after fifteen years actual experience in the study and treatment of alcoholic and drug habitues.

His observations have been made in the United States, Europe and the Orient where four thousand Chinese were treated for drug addiction under his direction with the remarkable record of only four fatalities.

The author has been largely responsible for many of the legislative campaigns for drug restrictions and in every way has been a tireless worker for the relief of this large class of unfortunates. This volume is divided into fifteen chapters, dealing with the various phases of the conditions met with in relation to cause, course and methods of treatment. He maintains that only the hopeless cases should be segregated in sanitariums and correction farms, that enforced abstinence and penalization have no curative value, but that they should be treated as invalids, emphasizing elimination and physical restoration.

The few hopeless derelicts should be relegated to colonies and thereby limit their contaminating influence. The author advises against the coddling methods of most sanitariums, the hope of success in home treatments, etc., but insists that they be handled in a firm, methodical manner, not by charity, but if unable to pay it should be made a deferred obligation which they are expected to defray.

The preface, by Richard C. Cabot, speaks highly of the author and the success of his methods of treatment.

The appendix by Alexander Lambert, M.D., on "The Relation of Alcohol and Disease," completes the volume which, in all, we consider a most worthy contribution and deserving of the consideration of all practitioners.

K. S. W.

### ACKNOWLEDGMENTS

Diseases of the Nose and Throat. By Algernon Coolidge, M. D., Professor of Laryngology in the Harvard Medical School. 12mo of 360 pages, illustrated. W. B. Saunders, Philadelphia and London, 1915. Cloth, \$1.50 net.

What to Eat and Why. By G. Carroll Smith, M. D., of Boston, Mass. Second edition, thoroughly revised. Octavo of 377 pages. Philadelphia and London; W. B. Saunders, 1915. Cloth, \$2.50 net.

Educational Hygiene. From the Pre-School Period to the University. Edited by Louis W. Rapeer, Ph.D., Professor of Education, Pennsylvania State College. Illustrated. Charles Scribner's Sons, New York.

The Practical Medicine Series, Volume VII Obstetrics. Edited by Joseph B. De Lee, A. M., M. D., Professor of Obstetrics, Northwestern University Medical School, with the collaboration of Herbert M. Stowe, M.D. Series 1915. The Year Book Publishers, Chicago. Price, \$1.35.

The Practical Medicine Series, Volume VI, General Medicine. Edited by Frank Billings, M. S., M. D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A. M., M. D., Professor of Medicine, Illinois Post-Graduate Medical School. Series 1915. The Year Book Publishers, Chicago. Price, \$1.50.



## MEDICAL NEWS

**Convicted for Misbranding.**—November 27, 1915, the United States Government started suit in the Federal Court before Judge John M. Clarke against Charles M. Simpson, head of the "Dr. Chas. M. Simpson Medical Institute," 1840 West 40th street, this city.

Simpson was charged with violating the Pure Food Act in shipping medicines he manufactured, alleged to be misbranded. The medicine was found by competent chemists to chiefly consist of a small amount of bromide and ammonium carbonate. The mixture was advertised extensively as an "effective remedy" in the treatment of lost nervous strength; all diseases which are really the result of diseases of the brain, spinal cord, medulla oblongata and the nerves given off from each of them; all nervous diseases and heart troubles; nervous prostration; spinal diseases; mania; melancholia; neurasthenia; dementia or "acquired feeble-mindedness;" katatonia and alternating insanity.

Attorneys from Washington joined forces with the U. S. District Attorney Wertz's office and vigorously prosecuted the case. To support their claim that the composition of the product as shown by the analysis was not such as to render it effective, or "cure all," in the treatment of the diseases referred to, the government summoned Doctors Charles F. Hoover, H. H. Drysdale, M. J. Lichty, J. S. Tierney, C. W. Stone, John Phillips and T. Sollmann, of Cleveland, as witnesses.

The jury promptly found Simpson guilty and he was fined \$200 and the costs.

---

**New Hospital for Fremont.**—Fremont and Sandusky County have subscribed a total of \$99,672.85 for a memorial hospital. Mrs. Webb C. Hayes, in a generous offer of building lot and accompanying sum for endowment, asked that the additional sum of \$75,000 be contributed by the people.

After a subscription campaign of remarkable enthusiasm, they were able to announce that the generous gifts of the people of the county had more than met the request of Mrs. Hayes.

---

**Meeting of Union Medical Association.**—The 167th Session of the Union Medical Association of the Sixth Councilor District was held at Canton, Ohio, Tuesday, November 9, 1915. Program: "Twilight Sleep," Dr. J. A. Van der Hulse, Akron; "Indication and Contra-indication for Caesarian Operation," Dr. H. T. Patrick, Youngstown; "Cancer of the Arvox," Dr. R. E. Skeel, Cleveland.

---

**The Trudeau School for Tuberculosis.**—Recent advances in the knowledge of tuberculosis have created a demand for opportunities for special advanced study in this department of medicine. Such study requires institutions, laboratories, and other agencies devoted to the investigation and management of this disease.

In response to an extensive and increasing demand and by the generous aid of public-spirited persons, it has been decided to offer courses in the advanced study of tuberculosis at Saranac Lake in the Adirondack Cottage Sanatorium founded by Dr. E. L. Trudeau in 1884, and in association with the Reception Hospital, the Saranac Laboratory, and the nearby New York State Sanatorium at Ray Brook.

A six weeks' course will be offered, covering all phases of the subject, including laboratory, clinical, and X-ray diagnosis, institutional organization, management and treatment, besides laboratory research.

The first session will be held from May 17, 1916, to June 27, 1916. The fees for the course will be \$100, with an additional \$10 for laboratory expenses. A house will be provided for the physicians who attend and will be given over to their exclusive use. The club rate for board and room will not exceed \$15 per week.

The instructors for the session of May, 1916, will include:

Doctor A. K. Krause, Pathologist, Saranac Laboratory, for the Study of Tuberculosis.

Doctor E. R. Baldwin, Assistant Director, Saranac Laboratory, for the Study of Tuberculosis.

Doctor Lawrason Brown, Consulting Physician, Adirondack Cottage Sanatorium.

Doctor A. H. Garvin, Medical Superintendent, New York State Sanatorium.

Doctor F. H. Heise, Resident Physician, Adirondack Cottage Sanatorium.

Doctor H. M. Kinghorn, President, Laurentian Sanatorium, St. Agatha, Canada.

---

**Bacterial Vaccines.**—The Evans Memorial for Clinical Research is desirous of coming into communication with as many physicians as possible who have used bacterial vaccines in the treatment of typhoid fever for the purpose of collecting statistics concerning the efficiency or non-efficiency of the method as a therapeutic measure. If any who have done this even with only one or a few cases will send their names and addresses, blank forms will be sent to them upon which uniform reports may be made. Due credit will be given to each in any reports that may be published. Kindly address all communications to Dr. W. H. Watters, 80 East Concord street, Boston, Mass.

---

**Doctor E. L. Trudeau's Life Ends.**—Edward Livingston Trudeau was born in New York City in 1848, descended from a French Huguenot family. His father, James Trudeau, owned a plantation near New Orleans, and his mother, Cephise Berger, was a daughter of Doctor Francoise Eloi Berger, a prominent physician of New York. Doctor Trudeau's father served in the Southern army, having command of a post on the Mississippi. He died after having been wounded and his estate confiscated by General Butler. Mrs. James Trudeau in the meantime had returned to her father's home in New York, and upon Doctor Berger's retirement from practice, went with him and the three children to live in Paris. Doctor Edward L. Trudeau was the youngest of these children, and spent his boyhood in Paris, getting his early education at the Lycee Bonaparte.

He returned to the United States at the age of 18, intending to become a naval officer, but his brother's death of tuberculosis turned his attention to medicine. After attending Columbia University, he graduated from the College of Physicians and Surgeons in 1871, and began practice in New York City. In the same year he married Miss Charlotte M. Beare, of Douglaston, Long Island.

In 1873 it was discovered that he had contracted tuberculosis and he came to Paul Smith's in the Adirondack mountains, where he greatly improved. After a time, at St. Paul, Minn. Doctor Trudeau suffered a relapse and returned to the Adirondacks to take up his permanent residence in 1874. In 1877 he came to Saranac Lake, having improved in health sufficiently to take up his profession, determined to found a sanatorium for pulmonary diseases. In 1882, inspired by Koch's discovery of the bacillus of tuberculosis, which was announced in that year, Doctor Trudeau began his laboratory work and was the first man in the United States to repeat and confirm Koch's experiments. In 1885 the first building of the Adirondack Cottage Sanatorium was completed and opened with two patients—the first realization of Doctor Trudeau's long cherished dream. In 1892 Doctor Trudeau was elected the first Village President of the newly incorporated Village of Saranac Lake. In 1893, while he was lying ill in New York City, his house at Saranac, which contained his laboratory, his experimental apparatus and all his records of years, was destroyed by fire. In 1894 he established, through the gift of George C. Cooper, of New York the Saranac Lake Laboratory for research work in tuberculosis. In addition to its output of original re-



sults, which has been large and valuable, the laboratory has tested many hundreds of proposed "cures" for tuberculosis. This laboratory is a lasting monument to Doctor Trudeau's energetic spirit, the first of its kind erected in the United States. A good deal of the work carried on in it has been the testing of proposed specific methods of treating tuberculosis. Many a fake "remedy" for "consumption" has met its Nemesis within those four stone walls. Doctor F. F. Friedmann and his "turtle bacilli" had been sentenced adversely in this laboratory long before the people of the United States heard of or went temporarily insane over it.

The Adirondack Cottage Sanatorium represents the concrete part of Doctor Trudeau's life-work. Its history we cannot give here—a vast sanitarium, the influence and example of which have been felt and followed all over the United States and Canada.

Dr. Trudeau died at Saranac Lake, November 20th, in the sixty-eighth year of his life, survived by his wife and one son. So ends the career of one of the most remarkable humanitarians who ever lived and accomplished for the world that which he could not do for himself. Many he saved; himself he could not save, despite his brave battle extending over forty years against the disease to the conquest of which he devoted his life.

### **Stereopticon Loan Library of the U. S. Public Health Service.—**

The Stereopticon Loan Library, established by the United States Public Health Service, consists of over 2000 views, the majority of which are original, dealing with the aspects of various public health problems. Additions are constantly being made to the collection. The slides are classified by diseases or subjects, the following being the respective divisions of the library:

*Alaska.*—Eighty-three views depicting living conditions in the territory of Alaska, the type of villages and the diseases from which the natives suffer.

*Children and Children's Diseases.*—The various eruptive diseases of children are shown in 50 views. Chiefly of interest to physicians.

*Health Exhibits.*—Over 90 photographic slides of the exhibit of the U. S. Public Health Service at the Panama-Pacific International Exposition. Many of these views explain the means of dissemination of different diseases, the mortality therefrom and the value of preventive measures. All are original.

*Hookworm.*—The geographic distribution of the disease, its economic importance, the life history of the parasite, its invasion of human tissue and the resulting effects, are demonstrated in a series of over 90 slides.

*Indians.*—Housing and living conditions among American Indians. Shown in 50 views.

*Leprosy.*—Forty-five slides depicting the disease. Principally of service to physicians.

*Living Conditions.*—Contains a relatively small number of slides. See other subjects.

*Malaria.*—Prevalence of the disease, the malarial parasites, larval, pupal and adult developmental stages of mosquitoes, breeding places, methods of extermination, including oiling, drainage and the types of fish destructive to larvæ. Prevention of the disease by screening and the use of quinine. 275 views.

*Milk.*—Eighty views, showing tuberculosis cows, proper and improper stabling care and treatment of dairy herds, methods of obtaining pure milk, spread of milk-borne epidemics and the value of sanitary measures.

*Miscellaneous Subjects.*—Sewage disposal, fumigation and cleaning of railway cars, and views relating to Rocky Mountain spotted fever.

*Mouth Hygiene.*—Twelve slides showing the development of the teeth.

*Parasites and Organisms.*—Over 200 views of the common organisms causing the diseases of man, including different types of water organisms. Also the developmental stages of fleas, lice, flies, and disease bearing vermin.

*Pellagra*—Statistical data, geographical distribution and the lesions of the disease presented by 60 photographic slides.

*Plague*—Perhaps the most complete collection of original plague slides extant. Practically every aspect of plague prevention is demonstrated, including the eradication of rodents and squirrels, methods of rat-proofing, ship fumigation, the examination and classification of rats, the plague organism, and the relation of fleas to the spread of the disease. Over 500 views.

*Rural Schools*—Not yet complete. Ten slides.

*Service General*—The activities of the U. S. Public Health Service depicted in 320 views. Quarantine vessels and stations, methods of fumigation, the examination of passengers, detention barracks and quarantine procedure. The mental and physical examination of immigrants, types of immigrants and immigration stations. Marine hospitals, including the tuberculosis sanatorium at Fort Stanton, New Mexico.

*Smallpox*—Ninety slides, illustrating the eruptive stages of the disease, the protection afforded by vaccination and the lesions thereof.

*Trachoma*—The disease in its acute and chronic stages, and such effects as pannus, entropion and blindness. Trachoma among the American Indians and the relief work of the Public Health Service in the mountains of Kentucky are also shown. One hundred and twenty slides, many of which are colored.

*Tropical Diseases*—Incomplete. Filariæ, trypanosomes, and intestinal parasites illustrated, together with the common infections of the tropics. Forty views.

*Tuberculosis*—100 slides showing the economic loss from tuberculosis, susceptible races, the tubercle bacillus, pathological conditions in the lungs, the relation of the disease to improper housing and the causes predisposing to infection. Also the methods of care, precaution to be exercised and the benefits of sanatorium treatment.

*Typhoid Fever*—Of great public health interest. The role of uncleanliness, infected milk, polluted water, improper sewage disposal, and flies, in the dissemination of the infection. Methods of prevention, including proper care of milk supplies, avoidance of water pollution, and the prevention of fly breeding; 350 views.

*Yellow Fever*—Mosquitoes in different stages of development, preventive measures, including detention camps. The discoverers of the means of transmission of the disease.

*How to Use the Stereopticon Loan Library*—The slides are loaned to physicians, health organizations, educators, welfare workers and others, without cost. Persons desiring slides should advise the bureau as to what subjects they are interested in, so that the proper catalogs may be forwarded. The slides should be selected by number, and the request made upon the application blank. If desired, the Public Health service will undertake to make the selection, provided the applicant will state what he wishes to illustrate. There is no arbitrary limit within which the slides are to be returned, but as the demand far exceeds the supply, it is expected that they will be returned at the earliest possible moment. Stereopticon lanterns are not loaned, but as the slides are of standard size,  $3\frac{1}{4}$  by 4 inches, any lantern may be used. It is expected that slides broken by careless handling or packing will be replaced; these to be ordered from the Government contractor by the U. S. Public Health Service and the bill therefor to be paid by the borrower.

It is requested that in returning the slides a letter of transmittal be forwarded, stating the approximate number of persons to whom the views have been shown. The container should be labelled with the name and address of the sender, and returned by express prepaid or by mail. Photographs, from which it is possible to obtain slides of public health interest will be gladly received and promptly returned.

In correspondence relative to the Stereopticon Loan Library, address the Surgeon General, U. S. Public Health Service, Washington, D. C., and refer to the letters D. Q.

---



## RECENT PUBLICATIONS ADDED TO THE CLEVELAND MEDICAL LIBRARY

- Behan, Richard J.—Pain, its Origin, Conduction, Perception and Diagnostic Significance. New York, Appleton & Co., 1914, 920 pp.
- Macewen, William.—The Growth of Bone. Observations on Osteogenesis. An Experimental Inquiry into the Development and Reproduction of Diaphyseal Bone. Glasgow, Maclehose & Sons, 1912, 210 pp.
- Prentiss, Charles William—A Laboratory Manual and Text-book of Embryology. Philadelphia, Saunders, 400 pp.
- Handbuch der gesamten Augenheilkunde; begründet von Theodor Saemisch. 2te Auflage. Vol. 14, Pt. 4 (Hirschberg, J., Geschichte der Augenheilkunde. Drittes Buch, zenter Abschnitt; Englands Augenärzte, 1800-1850). Leipzig, Englemann, 1914, 483 pp, 1 pl., 24 por.
- Vol. 11, Part 2B (Uthhoff, W., Ueber die Augensymptome bei den Erkrankungen des Nervensystems), 1915, 889-1677 pp.
- Vol. 7. 2te Auflage. 2 Teil, Kapitel, X. A. 1 Hälfte. (Leber, Th. Die Krankheiten der Netzhaut), 1915, 945 pp.
- Braun, Prof. Doctor Heinrich—Local Anesthesia, its Scientific basis and Practical Use. Translated by Percy Shields. From 3rd revised German edition. Philadelphia, Lea & Febiger, 1914, 17-399 pp.
- Allen, Carroll W.—Local and Regional Anesthesia. With Chapters on Spinal, Epidural, Paravertebral, and Parasacral Analgesia, and on other Applications of Local and Regional Anesthesia to the Surgery of the Eye, Ear, Nose and Throat, and to Dental Practice. Philadelphia, Saunders Co., 1914, 625 pp.
- Crie, George W.—The Origin and Nature of the Emotions. Miscellaneous Papers. Philadelphia, Saunders Co., 1915, 240 pp.
- Gwathmey, James Tayloe—Anesthesia. New York, Appleton & Co., 1914, 945 pp.
- Journal of Infectious Diseases, Volumes 1 to 7.
- Wright, Sir A. E.—Studies on Immunization and their Application to the Diagnosis and Treatment of Bacterial Infections. New York, Wood, 1914, 490 pp.
- Zinsser, Hans—Infection and Resistance. An Exposition of the Biological Phenomena Underlying the Occurrence of Infection and the Recovery of the Animal Body from Infectious Disease. New York, Macmillan, 1914, 546 pp.
- Krause, Fedor, and Emil Heyman—Text-book of Surgical Operations, Illustrated by Clinical Observations. Translated by Albert Ehrenfried. [Vol. 1.] New York, Rebman Co., 1915, 267 pp.
- Hermes, William B.—Medical and Veterinary Entomology. A Text-book for Use in Schools and Colleges, as well as a Handbook for the Use of Physicians, Veterinarians and Public Health Officials. New York, Macmillan Co., 1915, 393 pp.
- Haldy, Walter A.—First Aid Practice for Factory Dispensaries. With some Health Hints for Industrial Workers. Cleveland, 1914. 95 pp.
- Vincent, Swale—Internal Secretions and the Ductless Glands. With a Preface by Professor E. A. Schäfer. London, Arnold, 1912. 464 pp.
- Holland, James W.—A Text-book of Medical Chemistry and Toxicology. 4th edition. Philadelphia, Saunders Co., 1913, 678 pp.
- Thomas B. A., and R. H. Ivy—Applied Immunology. The Practical Application of Sera and Bacterins Prophylactically, diagnostically and Therapeutically, with an Appendix on Serum Treatment of Hemorrhage, Organotherapy and Chemotherapy. Philadelphia, Lippincott & Co., 1915, 359 pp.
- Vaughan, Victor C., Victor C., Jr. and J. Walter—Protein Split Products in Relation to Immunity and Disease. Philadelphia, Lea & Febiger, 1913, 17-476 pp.

- Morse, John Lovett, and Fritz B. Talbot—Diseases of Nutrition and Infant Feeding. New York, Macmillan, 1915, 345 pp.
- Crile, George W.—A Mechanistic View of War and Peace. New York, Macmillan Co., 1915, 104 pp.
- Hayhurst, E. R.—A Survey of Industrial Health Hazards and Occupational Diseases in Ohio. Columbus, 1915, 438 pp.
- Andrea, Percy—The Prohibition Movement in its Broader Bearings Upon Our Social, Commercial and Religious Liberties. Chicago, Mendelsohn, 1915, 421 pp.
- Phillips, Wendell C.—Diseases of the Ear, Nose and Throat, Medical and Surgical. 3rd edition. Philadelphia, Davis Co., 1915, 851 pp.
- Ormsby, Oliver S.—A Practical Treatise on Diseases of the Skin; for the use of Students and Practitioners. Philadelphia, Lea & Febiger, 1915, 1168 pp.
- Kerrison, Phillip D.—Diseases of the Ear. Philadelphia, Lippincott Co., 1913, 588 pp.
- Loeb, Hanau W.—Operative Surgery of the Nose, Throat and Ear. [Vol. 1.] St. Louis, Mosby Co., 1914, 390 pp.
- Church, Archibald, and Frederick Peterson—Nervous and Mental Diseases. 8th edition. Philadelphia, Saunders, 1914, 940 pp.
- Wright, Jonathan, and Harmon Smith—A Text-book of the Diseases of the Nose and Throat. Philadelphia, Lea & Febiger, 1914, 17-683 pp.
- Haglund, Patrik.—Barnförlamnings-följderna och deras behandling. Stockholm, Nordiska Bokhandeln, 1913, 604 pp.
- Bythell, W. J. S., and A. E. Barclay—X-ray Diagnosis and Treatment. A Text-book for General Practitioners and Students. London, Frowde, 1912, 147 pp.
- Barclay, Alfred E.—The Alimentary Tract. A Radiographic Study. New York, Macmillan Co., 1915, 195 pp.
- Allbutt, Sir Clifford—Diseases of the Arteries, Including Angina Pectoris. [2 Vols.] London, Macmillan Co., 1915, 534 and 550 pp.
- Polak, John Osborn—Manual of Obstetrics. New York, Appleton & Co., 1913, 468 pp.
- Falta, Wilhelm—The Ductless Glandular Diseases. Translated by Milton K. Meyers, M.D. Philadelphia, 1915. Blakiston, 673 pp.
- Lord, Frederick T.—Diseases of the Bronchi, Lungs and Pleura. Philadelphia, Lea & Febiger, 1915, 17-605 pp.
- Albee, Fred H.—Bone-Graft Surgery. Philadelphia, Saunders Co., 1915, 417 pp.
- Kelly, Howard, and E. Hurdon—The Veriform Appendix and its Diseases. Philadelphia, Lippincott & Co., 1911, 827 pp.
- Braasch, William F.—Pyelography [Pyelo-Ureterography]. A study of the Normal and Pathological Anatomy of the Renal Pelvis and Ureter. Philadelphia, Saunders Co., 1915, 323 pp.
- Lewis, Bransford, and Ernest G. Mark—Cystoscopy and Urethroscopy for General Practitioners. With a chapter by William F. Braasch. Philadelphia, Blakiston, 1915, 238 pp.
- Walton, Albert J.—Fractures and Separated Epiphyses. London, Arnold, 1910, 288 pp.
- Chetwood, Charles H.—The Practice of Urology. A Surgical Treatise on Genito-Urinary Diseases, Including Syphilis. New York, Wood & Co., 1913, 816 pp.
- Guiteras, Ramon—Urology. The Diseases of the Urinary Tract in Men and Women. New York, Appleton & Co., 1913 [2 Vols.], 701 and 757 pp.
- Kelly, Howard T., and C. F. Burnham—Diseases of the Kidneys, Ureters and Bladder. [2 Vols.] New York, Appleton & Co., 1914, 582 and 652 pp.
- Wood, Casey A.—The American Encyclopedia and Dictionary of Ophthalmology. Vol. 6. Dioptric System to Exophthalmitis, 3995 to 4847 pp. Vol. 7. Exophthalmometer to Gyrus, Angular, 4849 to 5671 pp. Chicago, Cleveland Press, 1915. [Edited by].



- Todd, T. Wingate—The Clinical Anatomy of the Gastro-Intestinal Tract. Manchester, University Press, 1915, 264 pp.
- Forbes, E. B., and M. Helen Keith—A Review of the Literature of Phosphorus Compounds in Animal Metabolism. Ohio Agricultural Experiment Station. Technical Series, Bulletin, No. 5. Wooster, 1914, 748 pp.
- Transactions of the American Association of Obstetricians and Gynecologists. Vol. 27, 1914. York, Maple Press, 496 pp.
- Transactions of the American Climatological and Clinical Association. Vol. 30. Philadelphia, 1914, 312 and 136 pp.
- Transactions of the Association of American Physicians. Twenty-ninth Session, held at Atlantic City, May 12 and 13, 1914. Vol. 29. Philadelphia, Dornan, 679 pp.
- Transactions of the Twentieth Annual Meeting of the American Laryngological, Rhinological and Otological Society, held at Atlantic City, June 19 and 20, 1914, 362 pp.
- Transactions of the American Pediatric Society. 26th Session, 1914, 362 pp.
- Transactions of the American Urological Association. Thirteenth Annual Meeting at Philadelphia, June 18, 19 and 20, 1914, 327 pp.
- Transactions of the Philadelphia Academy of Surgery, Vol. 17, 269 pp. Philadelphia, 1915.
- Clinics of John B. Murphy, Chicago, 1915. Vol. 4, Nos. 1-5. Saunders, Philadelphia.
- Cornell University Medical Bulletin. Studies from the Department of Medicine, including Therapeutics, Applied Pharmacology and Dermatology, Vol. 4, No. 4, 1915. Studies from the Department of Psychopathology, Vol. 5, No. 1, 1915.
- Received Through the *Cleveland Medical Journal***
- Bulkley, L. Duncan—Cancer, its Cause and Treatment. New York, Hoeber, 1915, 250 pp.
- Delorme, Edmond—War Surgery. Translated by H. DeMeric. New York, Hoeber, 1915, 248 pp.
- Horsley, J. Shelton—Surgery of the Blood Vessels. St. Louis, Mosby Co., 1915, 304 pp.
- Lagarde, Louis A.—Gunshot Injuries, How They are Inflicted, Their Complications and Treatment. New York, Wood & Co., 1914, 398 pp.
- Hill, Lewis Webb, and R. S. Eckman—The Starvation Treatment of Diabetes. With a Series of Graduated Diets as used in the Massachusetts General Hospital. Boston, Leonard, 1915, 72 pp.
- Karuse, Rudolf—A Text-book of Histology. [Translated from an Original Manuscript and Printed only in the English Language.] Rebman Co., New York, 1915, 274 pp.
- Hartman, Carl, and L. B. Bibb—The Human Body and its Enemies. A Text-book of Physiology, Hygiene and Sanitation. World Book Co., Yonkers, 1913, 358 pp.
- Hartman, Carl, and L. B. Bibb—First Book of Health. A Text-book of Personal Hygiene for Pupils in the Lower Grades. World Book Co., Yonkers, 1913, 155 pp.
- Mathews, Albert P.—Physiological Chemistry. A Text-book and Manual for Students. New York, Wood & Co., 1915, 1040 pp.
- Chapin, Henry Dwight, and Godfrey R. Pisek—Diseases of Infants and Children. 3rd edition. New York, Wood & Co., 1915, 578 pp.
- Crossen, Harry Sturgeon—Operative Gynecology. St. Louis, Mosby Co., 1915, 25-670 pp.
- Stengel, Alfred, and Herbert Fox—A Text-book of Pathology. Philadelphia, Saunders, 1915, 6th edition, 1045 pp.
- Towns, Charles B.—Habits that Handicap. The Menace of Opium, Alcohol and Tobacco, and the Remedy. New York, Century Co., 1915, 289 pp.
- Dercum, Francis X.—A Clinical Manual of Mental Diseases. Philadelphia, Saunders Co., 1913, 425 pp.

- Watson, David—Gonorrhoea and its Complications in the Male and Female. New York, Hoeber, 1915, 375 pp.
- Schamberg, J. Frank—Diseases of the Skin and the Eruptive Fevers. Philadelphia, Saunders Co., 1915, 3rd edition, 585 pp.
- Jelliffe, Smith Ely, and W. A. White—Diseases of the Nervous System. A Text-book of Neurology and Psychiatry. Philadelphia, Lea & Febiger, 1915, 17-796 pp.
- Pusey, Wm. Allen—Syphilis as a Modern Problem. American Medical Association, Chicago, 1915, 129 pp.
- Brunton, Sir Lauder—Therapeutics of the Circulation. 2nd edition. New York, Hoeber, 1914, 536 pp.
- Brothers, Elmer D.—Medical Jurisprudence A Statement of the Law of Forensic Medicine. St. Louis, Mosby Co., 1914, 17-301 pp.
- Anders, James M., and L. N. Boston. A Text-book of Medical Diagnosis. 2nd edition. Saunders Co., Philadelphia, 1248 pp.
- Tracy, Marguerite, and Mary Boyd—Painless Childbirth. A General Survey of all Painless Methods, with Especial Stress on "Twilight Sleep" and its Extension to America. New York, Stokes Co., 1915, 316 pp.
- Barnes, Harry A.—The Tonsils, Faucial, Lingual and Pharyngeal, with some account of the Posterior and Lateral Pharyngeal Nodules. St. Louis, Mosby Co., 1914, 17-168 pp.
- Delafield, Francis, and T. Mitchell Prudden—A Text-book of Pathology, with a Final Section on Post-Mortem Examinations and the Methods of Preserving and Examining Diseased Tissues. 10th edition, revised with the co-operation of Francis Carter Wood, M. D. New York, Wood & Co., 1914, 1116 pp.
- Foster, Nellis B.—Diabetes Mellitus—Designed for the use of Practitioners of Medicine. Philadelphia, Lippincott Co., 1915, 243 pp.
- White, R. Prosser—Occupational Diseases of the Skin. A brief account of the Trade Processes and Agents which give rise to them. New York, Hoeber, 1915, 165 pp.
- Kaplan, D. M.—Serology of Nervous and Mental Diseases. Philadelphia, Saunders Co., 1914, 346 pp.
- Chisholm, A. Stuart M.—Recreations of a Physician. New York, Putnam, 1914, 328 pp.
- Macnaughton-Jones, H.—Ambidexterity and Mental Culture. Rebman, New York, 1914, 102 pp.
- Brown, Charlotte A.—The Junior Nurse. Philadelphia, Lea & Febiger, 1914, 208 pp.
- Little, John Forsyth—Anatomy and Physiology. A Text-book for Nurses. Philadelphia, Lea & Febiger, 1914, 17-483 pp.
- Parker, Linette A.—Materia Medica and Therapeutics. A Text-book for Nurses. Philadelphia, Lea & Febiger, 1915, 17-311 pp.
- International Medical Annual—A Year-Book of Treatment and Practitioner's Index. Thirty-third Year. New York, Wood & Co., 1915, 760 pp.
- Journal of Laboratory and Clinical Medicine. Vol. 1, Nos. 1 and 2. Victor C. Vaughan, M. D., Editor-in-Chief. Mosby Co., St. Louis, 1915.
- 
- Clinics of John B. Murphy, Chicago, 1915. Vol. 4, Nos. 1-5. Saunders, Philadelphia.
- Bradford and Lovett—Orthopedic Surgery. Wood & Co., New York, 1915, 5th Edition, 416 pp.
- Dana, Charles L.—Text-book of Nervous Diseases. Wood & Co., New York, 1915, 8th Edition, 632 pp.
- De Lee and Stowe—Practical Medical Series, Vol. VII, Obstetrics. Year Book Publishers, Chicago, 1915.
- Wilson, James W.—Students Text-book of Hygiene. New York, Rebman Company, 1915, 270 pp.



# The Cleveland Medical Journal

---

Vol. XIV

NOVEMBER 1915

No. 11

---

## THE QUESTION OF SMALLER NURSING DISTRICTS FOR ALL KINDS OF PUBLIC HEALTH WORK, VERSUS LARGER DISTRICTS FOR SPECIALIZED WORK\*

By H. J. GERSTENBERGER, Cleveland, Ohio.

This important and vital question is at present, throughout the entire country, actively engaging the minds of many individuals interested in public health work—physicians, nurses, social workers and laymen. It is not, however, as many seem to think, a brand new idea which has just appeared recently. I recall distinctly an interesting discussion which I had during 1909 in Charlottenburg, with Dr. Orgler. It referred to the same subject, and Orgler stood for the smaller district. In the winter of 1910-1911, Mrs. James Garfield presented the same subject to me, and in the same manner, and I suppose there are many others who have had the same experience so long ago.

Before entering into the discussion of the subject of this paper, I wish to make the following statements:

(1) What we all must desire to accomplish is the adoption of the plan, whichever it may now or ultimately be, which will bring the best results, not simply to the individual, be he physician, nurse, patient, social worker, or layman, but to the whole community, city, state and nation.

(2) In deciding how to get the best results we must not forget that the first requisite is knowledge of the subject to be

---

\*This article is printed in a medical journal to impress once again upon the minds of medical men—both in practice and in medical schools—the great need of their serious attention to the proper development of their profession, in order that it might meet its obligation and opportunity in public health work and social medicine. A continuance of the general apathy of medical men to this field of medicine is bound to bring harm both to the profession and the public.

\*The substance of this article was presented as a part of the discussion at a meeting of the Section on Nursing and Social Work of the American Association for Study and Prevention of Infant Mortality, held in Philadelphia, November 10 to 12, 1915.

handled, and the second, thoroughness and common sense in applying this knowledge.

(3) The best results should not simply mean good feeling amongst the workers and patients, although, of course, harmony between patient and worker is of extreme importance, but rather the statistical proof by thorough and competent individuals that the morbidity, mortality, and all that both of these terms imply, are lessened to the greatest possible degree; or better stated, that in its broadest sense the health of the nation has been preserved to the highest degree. I emphasize the need of properly prepared statistics because of the fact that by far the great majority of those prepared in this country are worth absolutely nothing.

(4) I personally have believed for many years that the best results in public health and social medical work can be obtained by placing, practically speaking, all of the work of a district in the hands of one home worker, and by having the district small enough to enable the one worker to really care for the affairs of the district—*providing these district workers are directed and supervised by individuals who on the basis of knowledge and with thoroughness and common sense, can direct and supervise, namely, properly trained physicians.*

The present war has done much and will do still more in making many of us Americans realize the fundamental need of thoroughness in gaining and in applying knowledge in every kind of endeavor, and, therefore, I think that many more than formerly will appreciate the real meaning of these terms and will not so carelessly apply the criticism "too scientific, too thorough."

---

As the discussion of all of the phases of the question under consideration would go far beyond the bounds of a single article, I shall limit it to the consideration of the grounds generally given as sufficient to warrant a change, and also to the advantages and disadvantages which such change would represent to the infant welfare work as it is at present carried out in Cleveland under the joint efforts of the Bureau of Child Hygiene of the Division of Health, The Babies' Dispensary and Hospital, and the Pediatric Department of the Western Reserve Medical School. The discussion of the conclusions to be drawn from it will just as well apply to any other part of public health work for the simple reason that all different departments could have the same organization if they wished it and could do the work.



At the present moment the City of Cleveland is divided into fifteen districts for its infant welfare work. In each of these districts there is a dispensary of the Bureau of Child Hygiene, in charge of a physician and one to three nurses. Any parents can bring their infants to the Dispensary for advice in the care and feeding of their child, providing that it is well. If it is sick and the parents cannot afford the services of a private physician, the baby is then sent to the Central Dispensary of the Babies' Dispensary and Hospital, a philanthropic institution which cares only for sick infants of needy parents. When an infant has recovered its health, it is again transferred to the Prophylactic Dispensary from which it originally was referred to the Sick Dispensary.

From the following diagrams the organization of the infant welfare work carried out jointly by the three above mentioned institutions can be ascertained.

#### Diagram I

Showing department heads of staff organization of Babies' Dispensary and Hospital, Bureau of Child Hygiene of the Division of Health and Department of Pediatrics of Western Reserve University.

<i>Babies' Dispensary and Hospital</i>	<i>Bureau of Child Hygiene of Division of Health</i>	<i>Department of Ped- iatrics of Western Reserve University</i>
A. Medical Director.	A. Consulting Direc- tor.	A. P r o f e s s o r of Pediatrics.
B. P h y s i c i a n in Charge of Cen- tral Dispensary.	C. Director.	B. Associate in Pedi- atrics.
E. Superintendent of Nurses.	E. Superintendent of Nurses.	C. I n s t r u c t o r in Pediatrics.
D. Assistant Physi- cian in Charge of Central Dispen- sary.		D. I n s t r u c t o r in Pediatrics.

#### Diagram II

Present activities of Babies' Dispensary and Hospital, Bureau of Child Hygiene of the Division of Health, and Department of Pediatrics of Western Reserve University, co-operating in the reduction of infant mortality in Cleveland.

*Babies' Dispensary  
and Hospital**Bureau of Child  
Hygiene  
Division of Health**Western Reserve  
University*

(Medical Director)

Central dispensary for  
ill infants and  
young children.Central milk labora-  
tory supplying  
needs of Babies'  
Dispensary and  
Bureau of Child  
Hygiene.Massage and electrical  
treatment depart-  
ment.Radiographic Depart-  
ment.Training of medical  
students by practi-  
cal experience with  
ill infants.Training of medical  
students in milk  
laboratory.Training of nurses of  
Bureau of Child  
Hygiene and of  
special classes.Post-graduate course  
for nurses.\*Teaching of infant  
hygiene in public  
schools.Popular educational  
lectures.Out-Door Ward dur-  
ing summer months.

Wet-nurse bureau.

Sewing-classes for  
mothers (Prophy-  
lactic Babies' Dis-  
pensaries, Depart-  
ment of Child Hy-  
giene).(Consulting Director  
of the Bureau of  
Child Hygiene).Fifteen Prophylactic  
Babies' Dispensar-  
ies.Two nurses for oph-  
thalmia neonatorum  
work.One nurse for con-  
trol of neglected  
eye cases of older  
children and adults.Boarding home sys-  
tem—one child per  
home.Use of Prophylactic  
Babies' Dispensar-  
ies and of ophthal-  
mia neonatorum  
material for teach-  
ing medical students  
and nurses.Use of Prophylactic  
Babies' Dispensaries  
for mothers' sew-  
ing-classes in con-  
junction with Bab-  
ies' Dispensary and  
Hospital.(Professor of Pedia-  
trics)Training of medical  
students in diseases  
of infants, espe-  
cially nutritional  
disturbances,  
infant feeding, pre-  
paration of various  
foods at milk labor-  
atory of Babies'  
Dispensary and  
Hospital; general  
aspect of infant  
mortality work, and  
special parts of it  
by practical experi-  
ence in machinery  
of Babies' Dispen-  
sary and Hospital,  
and Bureau of  
Child Hygiene, Di-  
vision of Health.

---

\*Transferred to Med-  
ical Inspection of  
the Public Schools  
(in regular curricu-  
lum).



As a result of this organization it has been possible to have:

(1) All three institutions work together as one.

(2) All Bureau of Child Hygiene nurses spend three months in special training in the dispensaries and in the district with the educational nurse of The Babies' Dispensary and Hospital.

(3) All physicians in charge of the Prophylactic Dispensaries of the Bureau of Child Hygiene spend at least twelve months of regular daily attendance at the Central Dispensary of The Babies' Dispensary and Hospital, under the supervision and guidance of men well trained in Pediatrics. Until now all of these men have been full-time men.

In order to stimulate and improve the physicians and nurses engaged in any part of the entire work, they are supervised by physicians and nurses having greater experience and training than their own. In order to also have these supervisors properly trained and alert to the advances that are being made throughout the world, it is planned to make them an active part of a University organization. As far as the medical supervisors are concerned, this is an established fact.

(4) The Senior Medical students of Western Reserve University receive compulsory training both at the Central Dispensary for sick infants as well as in the Milk Laboratory and in the social-medical work of the Prophylactic Dispensaries.

The last three of these activities are based upon the conviction that the first requisite in doing infant welfare work is knowledge of the subject, and that this can only be gotten by thorough work for a minimum length of time.

(5) Regular meetings between the heads of the different divisions in order to discuss flaws and problems and to improve and enlarge the usefulness of the work. These meetings are held once each month.

(6) Each nurse care for all of the patients in her district, both when well and sick.

(7) A uniformity in the manner in which the physicians care for the routine of each Dispensary. This is due to the requirement stated above, that all men spend at least twelve months at the Central Dispensary before becoming eligible for physician-ship at the Prophylactic Dispensary. This uniformity in system

makes the nurses' work much easier and enhances the understanding and co-operation between physician and nurse.

(8) Centralization of authority for entire work.

In other words, this organization is in a position to have:

(a) Knowledge of the subject.

(b) Thoroughness and uniformity in applying this knowledge.

(c) Harmony and permanency, and

(d) A direct connection with the highest educational factor in the community, the University.

---

The main arguments advanced by those wishing a change from the present system are as follows: The placing of one nurse in a small district to do all of the public health work therein will:

(1) Make it impossible to make the homes of these families "a highway for social workers" and will also lessen the excessive number of visits made or supposed to be made in many of these homes.

(2) Save much valuable time by preventing the retracking of the same ground by workers from different departments and associations. It will also save time by making the distances which the individual nurse must travel, much shorter.

(3) Enable the nurse to better get the confidence of the families, because she will be in a better position to know all of the sides of the individual family's existence.

(4) Give to the poor patient what we consider best for ourselves—one advisor.

(5) Make a uniform scheme of public health nursing for country, village, small city, and large city. The fact that the rural nurse does all different kinds of work and that she seems to get along just as the country physician does, is also used as an argument for the feasibility of this plan.

*Answer to Argument 1:* Although I have always believed that some of the families visited by our different organizations were annoyed and distressed by a large number of different agencies visiting them, I have never felt that the number of families molested in this manner was very great—surely not as



great a number as many seem to believe. In order, however, to be able to get at the real situation, I decided to make a statistical study of a sufficiently large number of patients to permit me to draw definite conclusions.

For this study 1,406 charts of infants and young children coming either to the Central Dispensary of the Babies' Dispensary and Hospital (for the sick), or to the Prophylactic Dispensaries of the Bureau of Child Hygiene (for the well) were taken, in order of their admittance, beginning with January 1, 1915. Nine hundred and six of these, chosen equally from the 15 individual Prophylactic Dispensaries, were co-called "prophylactic" cases, while 500 were so-called "sick" cases. Of the 906 Prophylactic charts 88 were duplicates, having also been entered at the dispensary for sick children, leaving 818 Prophylactic charts for study, and together with the 500 sick, a total of 1,318.

The months studied were January, February, March, April, May and June, 1915.

The names of all of the "prophylactic" cases were given to the Charities Clearing House, which institution was kind enough to investigate each individual name and send a list of the different organizations who, according to its records, had been at some time or other interested in that family. It was not necessary to submit the names of the patients entered at the Central—Sick Dispensary—because the records of these cases already contained the data obtained from the Charities Clearing House.

The following institutions were mentioned in connection with some one or other of the families according to the data given us by the Charities Clearing House.

Associated Charities.

The Babies' Dispensary and Hospital and the Bureau of Child Hygiene of the Division of Health.

Charity Hospital and Dispensary.

Children's Fresh Air Camp.

City Physician.

Cleveland City Hospital.

Day Nursery and Free Kindergarten Association.

Emergency Work Room.

Florence Crittenton Home.

The Hebrew Relief Association.  
House of Correction.  
Humane Society.  
Huron Road Hospital and Dispensary.  
Juvenile Court.  
Lakeside Hospital and Dispensary.  
Legal Aid Society.  
Maternity Dispensary of Western Reserve University.  
Mothers' Pensions Department of the Juvenile Court.  
Out-Door Relief.  
Protestant Orphan Asylum.  
Rainbow Cottage.  
Salvation Army.  
Society for Promoting the Interests of the Blind.  
State Hospital for the Insane.  
St. Luke's Maternity Dispensary.  
Tuberculosis Dispensaries of the Division of Health.  
The Visiting Nurse Association.  
Vocational Guidance Bureau.  
Volunteers of America.  
Warrensville Farm.  
West Side Cottage and Deaconess Home.  
The Board of Education.

Of these only those were chosen for a study of their records who, as a part of their regular work, were likely to make frequent visits into the homes of our families and keep a record of the visits made. The associations selected in this manner were the following:

Associated Charities.  
The Babies' Dispensary and Hospital and the Bureau of Child Hygiene of the Division of Health.  
Day Nursery and Free Kindergarten Association.  
The Hebrew Relief Association.  
Humane Society.  
Juvenile Court.  
Maternity Dispensary of Western Reserve University.  
Mothers' Pensions Department of the Juvenile Court.  
Out-Door Relief.  
Rainbow Cottage.  
St. Luke's Maternity Dispensary.  
Tuberculosis Dispensaries of the Division of Health.  
The Visiting Nurse Association.

All of these associations were then asked to permit us to study their records of our patients. Most of the organizations did grant this permission, but some preferred to do the labor and



give us the data which they had collected. In this manner we were able to utilize all of the records of the above mentioned institutions except those of the Maternity Dispensary of Western Reserve University, whose records were not made accessible to us. According to the Charities Clearing House, 57 of the 1,318 patients had been cared for, at some time or other, by this last institution. It is hardly probable that all of these 57 came into the hands of the Maternity Dispensary of Western Reserve University during the six months of our study, and, therefore, the number influencing the statistical study will be less than 57. However, it is impossible to know this accurately without having seen the records.

So what I wished now to determine amongst the families of the 818 babies coming to the Prophylactic Babies' Dispensaries of the Bureau of Child Hygiene and the 500 coming to the Central Dispensary of the Babies' Dispensary and Hospital was the degree of over-visiting, of making the homes of these families a "high-way" for agents of different organizations. I, therefore, wished the statistics to answer the following questions:

(1) How many and what per cent of the total number of families of babies coming to the Prophylactic and Central Dispensaries have been visited by one, two, three, four, five, etc., different organizations during the same month?

(2) How many and what per cent of the total number of families visited in the given month have received a total of one, two, three, four, five, etc., visits during that same month?

(3) What per cent of the total number of families visited in the given month were visited by the different individual organizations?

(4) What is the relative position of the various organizations interested in these families, as to the number of families visited and as to the per cent of the families visited by them all during the given month?

(5) Is there any difference in "the degree of over-visiting" between the families of the prophylactic babies and those of the sick babies?

Each of the following five tables has an A and a B section. The former refers to the prophylactic cases and the latter to the sick.





**TABLE II-8: DATA OBTAINED CONCERNS PATIENTS GOING TO PROPHYLACTIC DISPENSARIES -- WELL BABIES**

[illegible]





From tables I-a and I-b we learn:

- A—that from 86.85 to 94.52 per cent of all of the “prophylactic families” and from 79.04 to 89.29 per cent of all of the “sick families” visited by one or more of the different organizations were visited by only one organization during a given month.
  - B—that from 5.03 to 11.42 per cent of all the “prophylactic families” and from 9.22 to 17.66 per cent of all of the “sick families” visited by one or more of the different organizations were visited by only two organizations during a given month.
  - C—that from 0.21 to 1.71 per cent of all the “prophylactic families” and from 1.29 to 3.29 of all of the “sick families” visited by one or more of the different organizations were visited by only three organizations during a given month.
  - D—that from 0.21 to 0.23 per cent of all the “prophylactic families” and from 0.25 to 0.46 per cent of all the “sick families” visited by one or more of the different organizations were visited by only four organizations during a given month.
  - E—that the per cent of families visited in the individual months by one organization is higher among the “prophylactic cases” than among the “sick cases.”
  - F—that in both “sick” and “prophylactic” cases the per cent of families visited by one organization is higher toward the summer months and lower toward the winter months.
- 

From tables II-a and II-b we learn:

- A—that from 45.71 to 62.04 per cent of all the “prophylactic” and from 35.62 to 54.47 per cent of all of the “sick babies’ families” received but one visit during a given month.
- B—that from 18.97 to 26.28 per cent of all of the “prophylactic” and from 19.48 to 28.57 per cent of ail of the “sick babies’ families” received a total of two visits during a given month.
- C—that from 7.29 to 16.57 per cent of all of the “prophylactic” and from 8.48 to 17.17 per cent of all of the “sick babies’ families” received a total of three visits during a given month.
- D—that from 2.57 to 6.04 per cent of all of the “prophylactic” and from 4.20 to 8.71 per cent of all of the “sick babies’ families” received a total of four visits during a given month.
- E—that from 71.99 to 82.92 per cent of all of the “prophylactic” and from 62.86 to 76.48 per cent of all of the “sick babies’ families” received a total of either one or two visits during a given month.
- F—that from 88.30 to 92.54 per cent of all of the “prophylactic” and from 74.59 to 86.18 per cent of all of the “sick babies’ families” received a total of either one, two or three visits during a given month.
- G—that from 93.38 to 96.04 per cent of all of the “prophylactic” and from 83.30 to 91.86 per cent of all of the “sick babies’ families” received a total of either one, two, three or four visits during a given month.
- H—that the per cent of “prophylactic” babies’ families receiving a total of one, two, three or four calls within one month from an individual or a number of organizations is greater by about five to ten per cent than the per cent of “sick” babies’ families visited in the same manner.
- I—that the number of families receiving a total of more than ten visits within one month is less than 1 per cent.







TABLE IV-a: DATA OBTAINED CONCERNS PATIENTS GOING TO PROPHYLACTIC DISPENSARIES -- WELL BABIES										
	B.D.&H. and B.C.H.	A.C.	V.N.A.	H.S.	J.C.	X.A.	T.D.	O.D.R.	St.I.M.	H.R. R.C. M.P.D.
Mon. Organizations										
JAN. No. of families										
1915 visited by										
given organi-										
zation	123	45	5	1	1	—	4	15	3	1 1 1
% of total no.										
of families(175)										
receiving visits	70.28	25.71	2.85	.57	.57	—	2.28	8.57	1.71	.57 .57 1.14
FEB. No. of families										
1915 visited by										
given organi-										
zation	232	50	4	1	—	1	7	6	2	— 1 1
% of total no.										
of families(274)										
receiving visits	84.67	18.24	1.45	.36	—	.36	2.55	2.18	.72	— .36 .36
MAR. No. of families										
1915 visited by										
given organi-										
zation	323	54	9	3	1	—	7	7	—	1 1 1
% of total no.										
of families(364)										
receiving visits	88.73	14.83	2.47	.82	.27	—	1.92	1.92	—	.27 .27 .27
APR. No. of families										
1915 visited by										
given organi-										
zation	395	40	12	3	—	—	7	5	1	1 1 1
% of total no.										
of families(428)										
receiving visits	92.28	9.34	2.80	.70	—	—	1.63	1.16	.23	.23 .23 .23
MAY No. of families										
1915 visited by										
given organi-										
zation	363	40	8	—	1	—	3	4	2	1 — 1
% of total no.										
of families(391)										
receiving visits	92.83	10.23	2.04	—	.25	—	.76	1.02	.51	.25 — .25
JUNE No. of families										
1915 visited by										
given organi-										
zation	439	27	5	1	—	—	7	2	—	— 2 1
% of total no.										
of families(457)										
receiving visits	96.06	5.90	1.09	.21	—	—	1.53	.43	—	— .43 .21

From tables III-a and III-b we learn:

A—that of the total per cent of from 17.95 to 26.28 per cent of the “prophylactic” babies’ families receiving a total of two visits per month, 16.42 to 20.57 per cent received these visits from one organization, and 1.53 to 5.71 per cent received these visits from two organizations; and that of the total per cent of from 18.20 to 30.93 per cent of the “sick” babies’ families receiving a total of two visits per month 16.41 to 25.34 per cent received these visits from one organization, and 1.79 to 5.59 per cent received these visits from two organizations.



TABLE IV-b: DATA OBTAINED CONCERNS PATIENTS GOING TO CENTRAL DISPENSARY — SICK BABIES

Mon.	Organizations No. of families visited by given organi- zation	B.D.&H. B.C.H.	A.C.	V.N.A.	H.S.	J.C.	K.A.	T.D.	O.D.R.	St.L.M.	H.R.	R.C.	M.P.D.
JAN. 1915													
		171	60	3	—	3	1	9	13	1	3	1	—
	% of total no. of families (217) receiving visits												
		78.80	27.64	1.36	—	1.38	.46	4.14	5.99	.46	1.38	.46	—
FEB. 1915													
	No. of families visited by given organi- zation	308	70	5	1	2	—	14	11	—	3	2	—
	% of total no. of families (334) receiving visits												
		92.21	20.95	1.49	.29	.59	—	4.19	3.29	—	.89	.59	—
MAR. 1915													
	No. of families visited by given organi- zation	369	56	4	1	—	1	16	4	2	2	1	—
	% of total no. of families (390) receiving visits												
		94.61	14.35	1.02	.25	—	.25	3.84	1.02	.51	.51	.25	—
APR. 1915													
	No. of families visited by given organi- zation	284	43	3	—	2	—	9	6	1	1	2	—
	% of total no. of families (309) receiving visits												
		91.90	13.91	.97	—	.64	—	2.91	1.94	.32	.32	.64	—
MAY 1915													
	No. of families visited by given organi- zation	252	36	1	—	1	—	15	2	2	1	—	1
	% of total no. of families (268) receiving visits												
		94.02	13.43	.37	—	.37	—	5.59	.74	.74	.37	—	.37
JUNE 1915													
	No. of families visited by given organi- zation	264	37	2	1	2	—	15	—	—	1	1	1
	% of total no. of families (271) receiving visits												
		97.41	13.65	.73	.36	.73	—	5.53	—	—	.36	.36	.36

B—that of the total per cent of from 6.22 to 16.56 per cent of the “prophylactic” babies’ families receiving a total of three visits per month, 5.10 to 12.57 per cent received the three visits from one organization, and .87 to 2.85 per cent received the three visits from two organizations, and 0.25 to 1.14 per cent received the three visits from three organizations; and that of the total of from 8.44 to 17.32 per cent of the “sick” babies’ families receiving a total of three visits per month, 7.83 to 12.56 per cent received the three visits from one organization, 0.36 to 4.3 per cent received the three visits from two organizations, and 0.25 to 0.46 per cent received the three visits from three organizations.

- C—that of the total per cent of from 2.63 to 6.57 per cent of the “prophylactic” babies’ families receiving a total of four visits per month, **1.4 to 4.39 per cent received four visits from one organization**, 1.02 to 1.82 per cent received the four visits from two organizations, 0.21 to 0.36 per cent received four visits from three organizations, and that of the total of from 3.12 to 9.27 per cent of the “sick” babies’ families receiving a total of four visits per month, **2.23 to 6.15 per cent received the four visits from one organization**, 0.64 to 2.76 per cent received the four visits from two organizations, and 0.25 to 0.36 per cent received the four visits from three organizations.
- D—that the per cent of the “prophylactic” babies’ families receiving a total of 1, 2, 3 or 4 visits per month from one organization is somewhat greater than the per cent of the “sick” babies’ families receiving the same number of calls from one organization.

From tables IV-a and IV-b we learn:

- A—that the **Babies’ Dispensary and Hospital and the Bureau of Child Hygiene of the Division of Health** visited from 70.28 to 96.06 per cent of the total number of “prophylactic” babies’ families visited and from 78.80 to 97.41 per cent of the total number of “sick” babies’ families visited in one given month.
- B—that the **Associated Charities** visited from 5.9 to 25.71 per cent of the total number of “prophylactic” babies’ families visited and 13.43 to 27.64 per cent of the total number of “sick” babies’ families visited in one given month.
- C—that the **Outdoor Relief Department of the City** visited from 0.43 to 8.57 per cent of the total number of “prophylactic” babies’ families visited and 0.74 to 5.99 per cent of the total number of “sick” babies’ families visited in one given month.
- D—that the **Bureau of Tuberculosis of the Division of Health** visited from 0.76 to 2.55 per cent of the total number of “prophylactic” babies’ families visited, and from 2.91 to 5.59 per cent of the total number of “sick” babies’ families visited in one given month.
- E—that the **Visiting Nurses’ Association** visited from 1.09 to 2.85 per cent of the total number of “prophylactic” babies’ families visited, and from 0.37 to 1.49 per cent of the total number of “sick” babies’ families visited.
- F—that the per cent of cases in which the **Babies’ Dispensary and Hospital and the Bureau of Child Hygiene of the Division of Health** were the sole institutions interested in any one month was decidedly higher than the per cent of cases visited by any other one organization.
- G—that this per cent increased with the approach of summer and decreased during the winter months.
- H—that the **Associated Charities** rank **second** in the per cent of cases visited by any one of the organizations.
- I—that this per cent of cases in which the **Associated Charities** was interested was highest during the winter months and lowest toward the approach of summer.
- J—that the **Outdoor Relief Department of the City** ranks **third** in the per cent of cases visited by any one of the organizations, the **Bureau of Tuberculosis of the Division of Health** **fourth**, and the **Visiting Nurses’ Association** **fifth**.
- K—that the two associations whose main reason for coming into the homes of both the “prophylactic” babies’ families and the “sick” babies’ families was to give material relief made a much higher per cent of visits to the homes of our patients within a given month than the two other institutions did who employ visiting nurses—the **Bureau of Tuberculosis of the Division of Health** and the **Visiting Nurses’ Association**.
- L—that the **Associated Charities** visited in a higher per cent the homes of the “sick” babies’ families than it did the homes of the “prophylactic” babies’ families.
- M—that the **Bureau of Tuberculosis of the Division of Health** to a greater degree visited more of the “sick” babies’ families than the “prophylactic” babies’ families.



TABLE V-a: DATA OBTAINED CONCERNING PATIENTS GOING TO PROPHYLACTIC DISPENSARIES -- WELL BABIES  
(CONTINUED ON PAGE BELOW)

	B.D.&H. and B.C.H.	1 ORGANIZATION												2 ORGANIZATIONS														
		A.C.	V.N.A.	H.S.	J.C.	Y.A.	T.D.	O.D.P.	St.L.M.	H.R.	R.C.	M.F.	B.C.H.	B.D.&H. and B.C.H.	A.C.	V.N.A.	H.S.	J.C.	Y.A.	T.D.	O.D.P.	St.L.M.	H.R.	R.C.	M.F.	B.C.H.	B.D.&H. and B.C.H.	
<b>JAN.</b> Organizations visited by given organi- zation	113	26	4	—	—	—	2	3	2	—	1	1	8	16	—	1	1	—	2	10	—	—	—	—	—	—	—	—
		(Of the total of 152 families visited by 1 organi- zation, 39 were not seen by B.D.&H. and B.C.H.)												(Of the total of 20 families visited by 2 organi- zations, 12 were not seen by B.D.&H. and B.C.H.)														
<b>FEB.</b> No. families visited by given organi- zation	212	25	2	—	—	1	1	2	2	—	—	—	18	23	2	1	—	—	5	3	—	—	—	—	—	—	—	—
		(Of the total of 245 families visited by 1 organi- zation, 33 were not seen by B.D.&H. and B.C.H.)												(Of the total of 27 families visited by 2 organi- zations, 9 were not seen by B.D.&H. and B.C.H.)														
<b>MAR.</b> No. families visited by given organi- zation	293	24	3	1	—	—	3	2	—	—	—	1	26	24	4	1	1	—	1	3	—	—	—	—	—	—	—	—
		(Of the total of 327 families visited by 1 organi- zation, 34 were not seen by B.D.&H. and B.C.H.)												(Of the total of 31 families visited by 2 organi- zations, 5 were not seen by B.D.&H. and B.C.H.)														
<b>APR.</b> No. families visited by given organi- zation	364	17	7	—	—	—	5	—	1	—	—	1	27	19	4	3	—	—	1	2	—	—	—	—	—	—	—	—
		(Of the total of 395 families visited by 1 organi- zation, 31 were not seen by B.D.&H. and B.C.H.)												(Of the total of 29 families visited by 2 organi- zations, 2 were not seen by B.D.&H. and B.C.H.)														
<b>MAY</b> No. families visited by given organi- zation	339	17	4	—	1	—	1	—	—	—	—	—	22	20	3	—	—	—	1	2	2	—	—	—	—	—	—	—
		(Of the total of 362 families visited by 1 organi- zation, 23 were not seen by B.D.&H. and B.C.H.)												(Of the total of 26 families visited by 2 organi- zations, 4 were not seen by B.D.&H. and B.C.H.)														
<b>JUNE</b> No. families visited by given organi- zation	417	8	1	—	—	—	5	—	—	—	—	1	20	17	3	1	—	—	2	1	—	—	—	—	—	—	—	—
		(Of the total of 432 families visited by 1 organi- zation, 15 were not seen by B.D.&H. and B.C.H.)												(Of the total of 23 families visited by 2 organi- zations, 2 were not seen by B.D.&H. and B.C.H.)														

(CONTINUED FROM PAGE ABOVE)

TABLE V-a: DATA OBTAINED CONCERNS PATIENTS GOING TO PROPHYLACTIC DISPENSARIES -- WELL BABIES

TABLE 1-8. DATA OBTAINED CONCERNING PATIENTS GOING TO PROPHYLACTIC DISPENSARIES -- WELL BABIES															
		3 ORGANIZATIONS										4 ORGANIZATIONS			
		B.D.&H. and B.C.H.	A.C.	V.N.A.	H.S.	J.C.	K.A.	T.D.	O.D.R.	St.L.M.	H.R.	R.C.	M.P.D.	B.C.H. and B.C.H.	B.D.&H. and B.C.H.
MON.	Organizations														
JAN.	No. families														
1915	visited by														
	given organi-														
	zation	2	3	1	--	--	--	2	1	--	--	--	--	--	--
		(Of the total of 3 families visited by 3 organi-													
		zations, 1 was not seen by B.D.&H. and B.C.H.)													
FEB.	No. families														
1916	visited by														
	given organi-														
	zation	2	2	--	--	--	1	1	--	--	--	--	--	--	--
		(Of the total of 2 families visited by 3 organi-													
		zations, all were seen by B.D.&H. and B.C.H.)													
MAR.	No. families														
1915	visited by														
	given organi-														
	zation	4	6	2	1	--	3	2	--	--	--	--	--	--	--
		(Of the total of 6 families visited by 3 organi-													
		zations, 2 were not seen by B.D.&H. and B.C.H.)													
APR.	No. families														
1915	visited by														
	given organi-														
	zation	3	3	--	--	--	1	2	--	--	--	--	--	1	1
		(Of the total of 3 families visited by 3 organi-													
		zations, all were seen by B.D.&H. and B.C.H.)													
MAY	No. families														
1916	visited by														
	given organi-														
	zation	2	3	1	--	--	1	2	--	--	--	--	--	--	--
		(Of the total of 3 families visited by 3 organi-													
		zations, 1 was not seen by B.D.&H. and B.C.H.)													
JUNE	No. families														
1915	visited by														
	given organi-														
	zation	1	1	--	--	--	--	1	--	--	--	--	--	1	1
		(1 family visited by 3 organizations; seen by													
		B.D.&H. and B.C.H.)													
		(1 family visited by 4 organi-													
		zations; seen by B.D.&H. & B.C.H.)													





(CONTINUED FROM PAGE ABOVE)

TABLE V-b: DATA OBTAINED CONCERNS PATIENTS GOING TO CENTRAL DISPENSARY - SICK BABIES

[illegible]



Tables V-a and V-b give the most common combinations of organizations visiting the homes of the "prophylactic" babies families and the "sick" babies families. There is no need to make any further statements regarding them.

The deductions which I believe must be made from the above statistics are as follows:

- 1—that the so-called "overvisiting" of the homes of the "prophylactic" babies' families and of the "sick" babies' families exists in such a very small degree as to be entirely negligible:—
  - (a) from 86.85 to 94.52 per cent of the "prophylactic" babies' families visited and from 79.04 to 89.29 per cent of the "sick" babies' families visited receiving visits from but one organization during one month,
  - (b) from 93.38 to 96.04 per cent of the "prophylactic" babies' families visited and from 83.30 to 91.36 per cent of the "sick" babies' families visited receiving a total of either one, two, three or four visits during one month,
  - (c) less than one per cent of either "prophylactic" or "sick" babies' families visited receiving more than ten visits during one month.
- 2—that in all instances, except one—see chart IV-A and IV-B January, Outdoor Relief Department—the per cent of families receiving but one visit per month is from five to ten per cent greater in the case of the "prophylactic" babies' families than in the case of the "sick" babies' families.
- 3—that next to the Babies' Dispensary and Hospital and the Bureau of Child Hygiene of the Division of Health the organizations engaged in giving material relief visited the greatest number of both "prophylactic" babies' families and "sick" babies' families, and not the organizations extensively using visiting nurses.
- 4—that by far the greatest per cent of the various total number of visits made to the families of both the "prophylactic" babies and of the "sick" babies were made by one organization.
- 5—in short, that Argument I which represents the most emphatic contention of those who would change the present system of infant welfare work falls out of practical consideration.

*Answer to Argument II.* There is no doubt in my mind that were it possible to place one nurse in a district she would have much more time to spend doing actual nursing work, especially if her district happens to be in a less thickly populated territory. All of us engaged in infant welfare work know that the number of cases visited regularly by our different nurses depends to a big degree upon the density and also upon the size of the individual district.

However, this advantage cannot offset the inferiority of the work that nurses will do in such districts if they are not supervised and directed by properly trained full time medical men.

*Answer to Argument III.* I believe that this argument also holds; although this does not mean that it will be impossible for a

"specialized" nurse to gain the confidence of her families, even if other agents and nurses have preceded her. Nevertheless, the number of individuals among doctors, nurses, social workers and laymen who have an especial ability in gaining the confidence of their charges is not large, and, therefore, everything that will help in the fulfillment of this important object is not to be ignored.

However, this advantage also cannot offset the inferiority in work just mentioned under Argument II.

*Answer to Argument IV.* This argument, it seems to me, falls of its own accord, for there is no doubt of the fact that the best work on the whole is done by those who concentrate upon one subject; in other words, by those who specialize. What we all wish is the best advice rather than the one advisor. The best practical proof of the truth of this statement is the fact that the following get the advice of specialists whenever they can.

- 1—the well-to-do, because they want the best that money can give them.
- 2—the medical men, because they know how to obtain the best medical advice and what the best medical advice is.
- 3—the Jewish race, because as is well known they are more alert and interested in the intelligent care of their family members than any other race.

*Answer to Argument V.* It surely would be an advantage to have one scheme for country, village, small city and large city, but to use the fact that the rural nurse and the country physician do all of the various kinds of work in their home territories does not prove that this is the best method and that their work is as good as it can be. The statement made under the answer to Argument IV applies and answers here equally well.

The rural nurses and the country physicians surely do their best and often surprise us with their accomplishments, but to say that they are giving the patients the best care and advice that they can get is as no one knows and realizes better than the country physician himself, far from the truth.

---

#### Arguments Against a Change from the Present System

*Argument I.* The establishment of small nursing districts for all kinds of public health work, not in charge of a competent, properly trained and supervised, full-time physician will make it impossible to have in public health work:—

(a) the basis of the entire work—knowledge of the subject and centralization of authority and responsibility—in the hands of



the only individual who by training and experience can direct and lead this work, the properly trained and supervised full-time physician.

To place the direction of such a district in the hands of one nurse, be she ever so well trained, or in the hands of a social-worker, or in the hands of a physician who has just recently graduated from a medical school, or in the hands of medical men who have been a failure in the practice of medicine, would be a fatal mistake. Further remarks pertaining to this argument are unnecessary. Its truth is clear and evident.

*Argument II.* The main argument advanced by those who would change the present system, namely, that the families are being over-visited, falls away because, as was shown in the discussion of the statistical tables given above, this over-visiting does not exist except in so small a degree as to make it no factor in making or determining a final decision.

*Argument III.* The advantages to be gained by saving time are not to be considered when the basis of the whole work is at the same time overlooked—knowledge of the subject and centralized authority and responsibility.

*Argument IV.* All progress in every human endeavor is the result of concentration upon one subject; in other words, specialization.

---

#### Summary of Discussion So Far Presented

1. The data submitted above prove that the so-called over-visiting is so small in extent that it falls away as an argument for changing the present system.

2. The adoption of a scheme which would enable the placing of one nurse in a small district for all kinds of public health work would undoubtedly save time which is valuable.

3. The adoption of a scheme which would enable the placing of one nurse in a small district for all kinds of public health work without having a competent, full time physician as the absolute head would make intelligent, thorough work impossible and would, to my mind, far outweigh the advantages to be derived from the saving of valuable time.

4. Unless a scheme, an ideal scheme, as the one described on pages 738-742 can be established, it will be a mistake to change

from the present system which does make possible the following:

- (a) Knowledge of the subject,
- (b) Thoroughness and uniformity in applying this knowledge,
- (c) Centralized authority and responsibility in individuals who have knowledge.
- (d) Harmony and permanency, and
- (e) A direct connection with the highest educational factor in the community, the University.

---

### The Ideal Scheme

The ideal scheme, it seems to me, would be a combination of the one at present existing and the other proposed by the opponents of the present scheme, to which is added full-time employment of properly trained and supervised medical men.

In the following scheme, which is diagramed in charts 1 and 2, I have outlined an organization that in my estimation will be able to meet the requirements as stated in paragraphs 1-4 on pages 713 and 714.

This plan would have as its fundamental characteristics the following:

- (1) The centralization of authority in the hands of one individual—the properly trained and supervised district physician. (See Chart 1 and 2.)

In order to be worthy of holding a position of such authority and importance, the district physician would have to be a man of intelligence and thoroughness, who has had an adequate medical and social training. In order to attract men with the necessary ability and with the desire to devote their lives to this field of human endeavor, it would be necessary to put this position on the full-time, civil service, pension basis. Before entering upon such a full-time district physicianship, it would be necessary, both for the welfare of the physician himself as well as for the work, to have him pass through an apprenticeship of about three years as an assistant to a full-time district physician. The time so spent would give him a most valuable training in social-medical work and would, on the one hand, help the man to decide whether he cared to make this his life's work, and on the other hand, give his future employers sufficient knowledge to enable them to de-



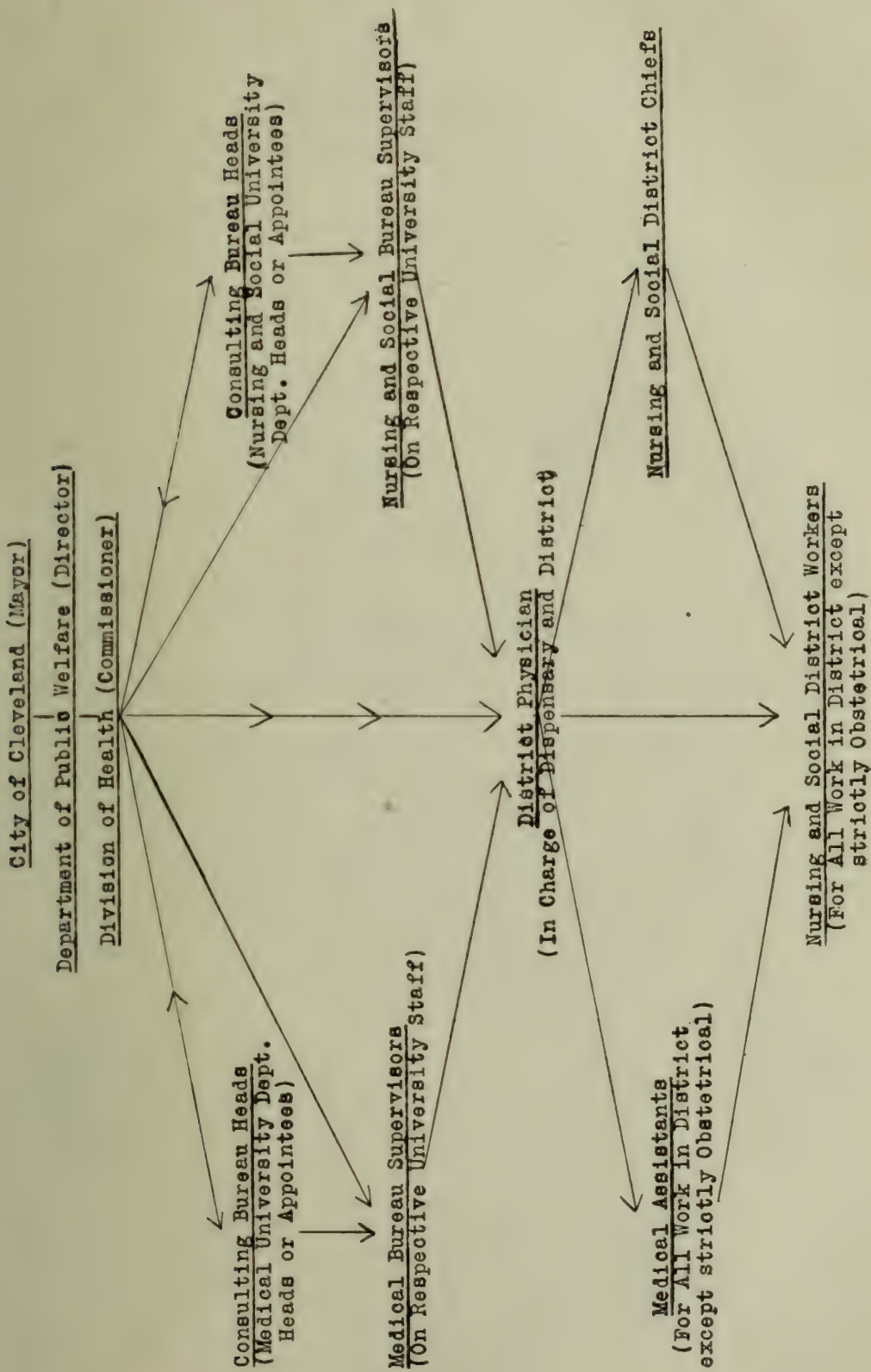


Chart 1

cide as to his capabilities and desirability. I am firmly convinced that a medical man of the above description and with his life laid out for him in the above stated manner, would be by far the best suited individual to direct district work. Such a man, by reason of the supervision and encouragement given him by members of the different University department staffs, would be

DISTRICT I

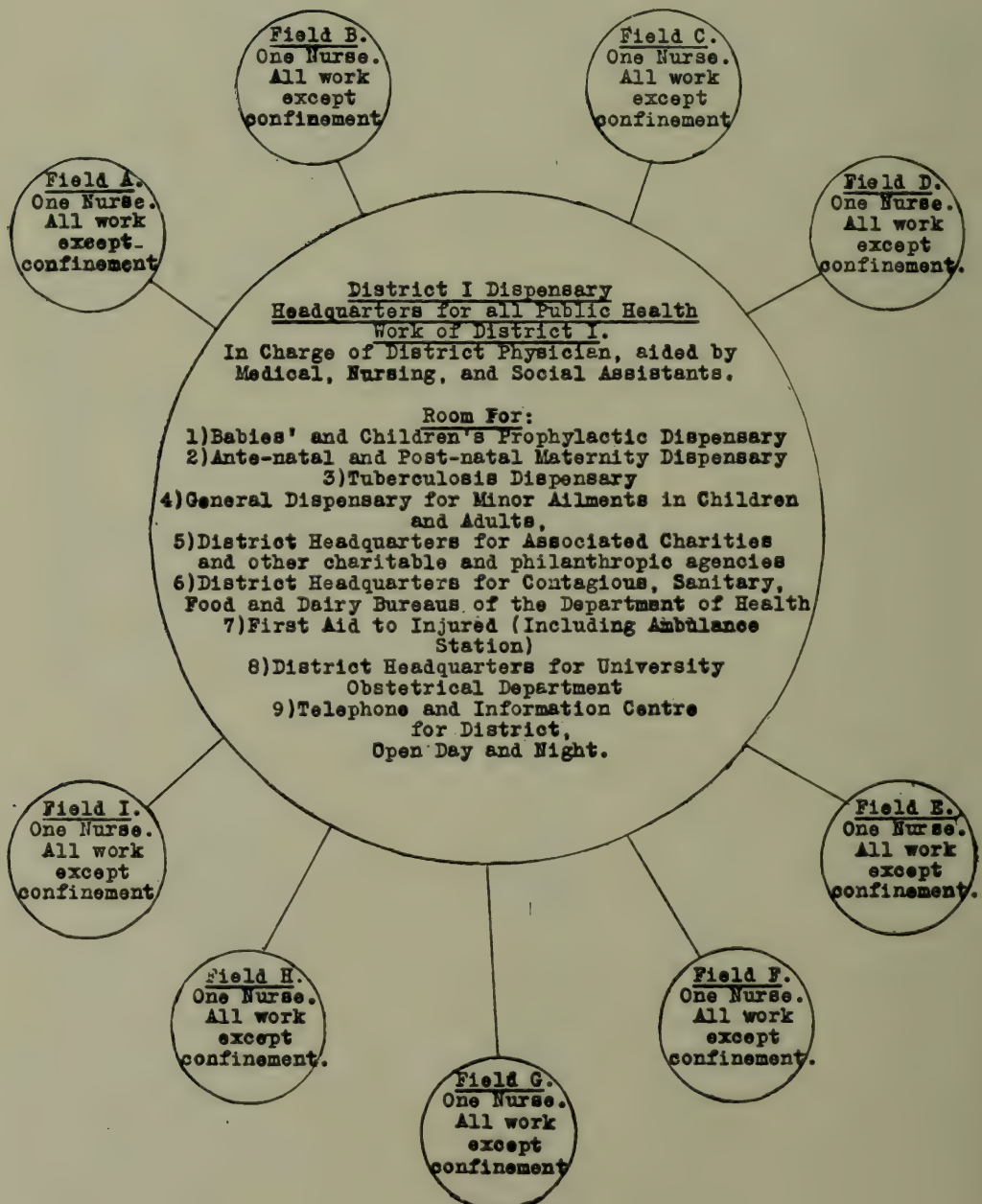


Chart 2



in touch with the progress made in the different fields of medical, nursing and social endeavors, and so would be an able and constant teacher and leader to those under him—physicians, nurses and social workers. Under such a teacher and director, one nurse could do all of the public health work of a district and do it well. Without such direction, the district work by one nurse in a district must needs be distinctly inferior from the standpoint of knowledge and thoroughness.

It is also true that without knowledge and thoroughness it is impossible to judge the results obtained. Most of those who would judge have not knowledge, and many think they know what thoroughness in this work means.

(2) The supervision and constant education of this physician by the heads of the various University departments in medicine, sociology and nursing, or by members of their staffs appointed by them. (See Chart 2.)

I choose the University as the guiding and supervising institution for two reasons:

(a) Because with our present, ever-changing form of government, the University is the only place where we can hope for stability, conservatism, permanency and ideals. This does not mean, of course, that stability, conservatism, permanency and ideals are always found at the University, but in our country they are most likely and most frequently to be found there rather than anywhere else.

(b) Because the University in order to best train men and women for such work needs direct access to the practical public health work.

Such supervision would place at the disposal of the district physician the digest and the advice of experts in the various special fields of medicine, nursing and sociology, and would enable him to become the great general practitioner and advisor that we look for so frequently in vain amongst medical men, simply because it is impossible for one individual to alone collect the kernels of the work of the various groups. Through this organization the district physician would be enabled to do this to a marked degree.

This scheme would also keep the eyes of those who are training medical men open to their needs.

(3) The placing of one nurse in the home for all work except confinement. This work on account of its great irregular-

ity would have to be done by another staff, namely, the University or municipal obstetrical department. (See Chart 1.)

(4) The bringing together at one place—preferably in conjunction with the public school of the district—and in close contact all of the agencies at work in the district. (See Chart 2.)

(5) The development of public health work on the basis of knowledge, thoroughness, uniformity, harmony, and permanency, together with a maximum saving of time and effort.

**The first point, however, to be established in this scheme is not the one nurse in a small district for all kinds of public health work, but the properly trained, competent full-time physician.** At the present time this probably can only be done by the establishment of an endowment sufficiently large to insure the permanency of the experiment for at least ten years.

It is not necessary to have an endowment for the entire work. One sufficiently big enough to insure the choice of the proper physician and his retention, after one year's successful trial, for at least ten years, is all that is necessary. The remainder of the equipment can be obtained by having the various organizations working in the district transfer some parts of their staffs in order to make up the complete working outfit.

#### **Explanation for the Abbreviations for the Organizations Used in the Tables**

B. D. & H. and B. C. H.: The Babies' Dispensary and Hospital and the Bureau of Child Hygiene of the Division of Health.

A. C.: Associated Charities.

V. N. A.: The Visiting Nurse Association.

H. S.: Humane Society.

J. C.: Juvenile Court.

D. N. & K. A.: Day Nursery and Free Kindergarten Association.

T. D.: Tuberculosis Dispensaries of the Division of Health.

O. D. R.: Out-Door Relief.

St. L. M.: St. Luke's Maternity Dispensary.

H. R.: The Hebrew Relief Association.

R. C.: Rainbow Cottage.

M. P. D.: Mothers' Pension Department of Juvenile Court.

#### **Conclusion**

Until the day comes when some scheme like the one just described can be temporarily or permanently put into operation, it will be better and wiser to stick to the present plan of so-called "specialized" district nursing, rather than to adopt the suggested plan of so-called "generalized" district nursing, because the only



apparent and real advantage to be gained by the establishment of the latter, namely, the saving of valuable time, cannot outweigh the advantages inherent in the former, namely:

- (a) Knowledge of the subject.
- (b) Thoroughness and uniformity in applying this knowledge.
- (c) Centralized authority and responsibility in individuals who have knowledge.
- (d) Harmony and permanency, and
- (e) Direct connection with the highest educational factor in the community, the University.

In the case of villages and very small cities, where the funds are only sufficient to employ one worker, and in the case of the country districts where the families are relatively few in number and the distances to be covered very great—the matter of cost alone will be sufficient to make the establishment of the “ideal scheme” or even the scheme of specialized district nursing an Utopian dream. Under such circumstances, we should be glad to have even the least ideal scheme and should consider it a great asset, for it is surely better than nothing at all.

---

**Cleaner, Cheaper Foods.**—Illustrations in the August 14 number of “The Survey” show three of many activities undertaken in the first two years of its existence by the Social Welfare Department of the New York Association for Improving the Conditions of the Poor, with a view to “fostering preventive and constructive social measures.”

The Food Supply Store, run by the department, is a model of cleanliness and efficiency. It serves both as a food distribution agency for families under the care of the association and also does a retail cash business. Its average daily sales amount to nearly \$100. According to the Department of Social Welfare, in the ordinary retail store, 37 cents out of every dollar is spent for retail distribution and profit and only 63 cents for food. In the Food Supply Store, 17 cents out of every dollar is spent for administration and distribution and 83 cents for food.

Another illustration shows the People’s Kitchen at Twenty-seventh Street and Tenth Avenue. The housewife in the neighborhood of the kitchen can obtain a large variety of hot, well-cooked foods at from two to seven cents a portion. Most of the food is taken out to be eaten in homes or nearby factories. Three meals a day are served in the kitchen, however, to the longshoremen, school children, factory workers, and mothers in the vicinity.

For two cents additional charge, hot food is delivered to sick or convalescents. On a recent inspection of the kitchen by the Bureau of Food Inspection of the Department of Health, it was given a perfect sanitary score.

The third illustration is that of a peddler’s push-cart, the top of which is covered by glass doors, thus protecting the food from fingers, filth and flies.

## MEDICAL INSPECTION OF SCHOOL CHILDREN

By E. A. PETERSON, M. D., Director of Medical Inspection, Board of Education, Cleveland

When the people of Ohio passed the Compulsory Education law, 27 years ago, they expressed, by so doing, the realization of the necessity of education for the maintenance of the State. They said by that act that they realized that our Democracy would stand or fall depending on the citizenship of its people.

The bringing of great numbers of children together in our wonderful schools while contributing to the ends above stated, was attended on the health side by some evils which were not anticipated. The placing of one-fifth of the population indoors and in seats for five hours per day, when it had been accustomed to outdoor activities just at the period of life when that part of the population most needed outdoor activity could not have worked other than harm.

The close association of large numbers of children also made communication of disease particularly easy.

These evils, associated with the fact that the problem of maintaining health has become more and more complex as we have become civilized, and that the struggle for what we all consider necessities, has absorbed us to such an extent that we can neither take time to study health problems, therefore, cannot pass on knowledge of health matters to our children, have turned attention to the Public School as a means of perpetuating health knowledge, health ideals and health habits.

The first work of this kind in Cleveland is described in Superintendent Jones' report for 1900. In that year the schools became greatly interested in the question of defective vision. Tests were made by teachers in different grades, and as a result over 2,000 children were given treatment.

In 1906, an agreement was reached with the Board of Health, so that each alternate day a health inspector communicated with the principal of every school. Teachers were warned to be on the alert for symptoms of illness, and children showing signs of measles, whooping cough, scarlet fever, or other common diseases of childhood, were reported to the principal, and through her to the Board of Health. Contagious cases were excluded from school as soon as detected, and a systematic



campaign started against the waves of disease which were sweeping one after another through the schools.

In the same year Drs. L. W. Childs, J. H. McHenry, H. L. Sanford, and other members of the medical profession volunteered their services as school physicians, to detect not only cases of possible contagion, but also the existence of physical defects. What was probably the first school dispensary in the United States was opened at the request of Dr. Childs by the Board of Education in 1907 at the Murray Hill School. The value of school dispensaries was so immediately evident that by 1909 seven others were established for the use of these three physicians.

Coincident with the dispensaries came the school nurse. When the first nurse was appointed at the Murray Hill School, a remarkable change was observed among the children. Absences became less frequent. Skin diseases were rare. Children began to take an interest in health matters, and there was a marked rise in standards of neatness and cleanliness. Teachers and principals united in their demand for more nurses, until within a year after the movement started there were six nurses appointed by the Board of Education and regularly employed in school work. In the same year, December, 1909, the Board of Education formally voted to establish a Division of Health Supervision and Inspection as part of the regular school system.

#### **The Present System**

Cleveland employs 16 physicians, one oculist, and 27 nurses to take charge of the health of her school children. She spends \$36,000 a year on salaries and supplies for these people. She maintains 86 school dispensaries and clinics. Cleveland is making this heavy investment because she finds it pays.

As it is at present organized, the Division handles inspection for contagious diseases, inspection for physical and mental defects, follow-up work for the remedying of defects, health instruction, recommendation of children to schools for the physically and mentally handicapped, school lunches, gardens, and playgrounds.

Either the nurse or physician reports at each school every day of the year. Once during the year each child is given a careful physical examination, and further examinations are made where they are needed. All serious defects are reported to parents, and in cases where treatment is important, parents

are urged to consult with the school doctor concerning the nature of the difficulty and the best means of curing it. To supplement these interviews, the school nurse spends a large part of her time in visiting homes, talking with parents, noting conditions under which children live, and making suggestions as to home care.

Some idea of the complexity of this work may be gained from the Division records for 1914-1915. From the beginning of September to the end of June—a period of 38 school weeks—doctors and nurses examined 74,725 children; gave private interviews to 2,547 parents; made 5,675 visits to dispensaries; 10,603 visits to homes; and gave 76,240 treatments and dressings. In addition, they gave 775 toothbrush drills, and 19,406 individual or class health talks to the pupils of the public schools during the year.

#### **Cleveland's Dispensaries**

Cleveland has 86 school dispensaries, or what are usually termed "physicians' offices." These are rooms about 20 feet long by 15 feet wide, located in the basement or on the first floor of the school building, well lighted, and painted in white or light colors. Typically, they contain one or two small white enamel tables, several chairs, a wash basin with running water, a white enamel pail for waste materials, wooden tongue depressors, eye charts, a medical cabinet filled with instruments and supplies, filing boxes, and printed forms. In 37 of the elementary schools, shower baths are provided as part of the equipment of the building.

Cleveland's dispensaries are of exceptionally high grade. In every case, lighting, ventilation and equipment are good. Many of the rooms are large enough for conferences and hygiene talks, and in at least one school—the East Madison—the dispensary is used with desirable psychological effect for the regular meetings of the Mothers' Club. The excellence of Cleveland's school dispensaries has contributed in no small measure to the efficiency of the medical service, and money spent in this way has been a wise investment.

#### **Clinics**

Dental work for school children was introduced about a year ago by the Cleveland Auxiliary of the National Mouth Hygiene Association. Building space is provided by the Board of Education in four schools—Stanard, Lawn, Fowler, and Marion. The Association furnishes equipment, dentists, and



assistants. Clinics are open three forenoons a week and are crowded to capacity.

An eye clinic is maintained by the Department of Medical Inspection at the Brownell School. This clinic is open every afternoon during the school year. Glasses are furnished for pupils on the payment of a small sum, the amount asked depending upon the judgment of the school nurse, who is in touch with the family. Some 663 refractions were made during the year 1914-1915.

Rather an unusual form of clinical work is found in service rendered by students of the Cleveland College for Barbers. In several districts an arrangement between the school physician and the college provides that free hair cuts be furnished pupils at intervals during the school year. The coming of the barber is an event eagerly greeted, and principals report that as a result children show increased pride in personal appearance.

There are no other clinics in connection with the Cleveland public school system. Mental examinations are made by a special teacher appointed for that purpose. All surgical cases are referred to family physicians or local hospitals for treatment.

In addition to regular work of inspection and examination, the doctors and nurses of Cleveland spend a great deal of time in conferences with parents, talks with teachers, lessons and talks to children, toothbrush drills, and the like.

The dentist, the oculist, the physician, should come to be regarded, not as dispensers of cures nor sympathetic listeners to hypochondriacs, but as leaders to whom intelligent people go in order to forestall trouble—specialists in health rather than disease. Leading its future citizens to form right habits of thinking and acting in regard to health is one of the greatest educational services which the public school can render.

---

Note—I have quoted liberally from the report just published by Dr. L. P. Ayres on *Health Work* in the Cleveland Public Schools. E. A. P.

---

## PROTECTION OF CLEVELAND'S FOOD SUPPLY

By FLORENCE V. BALL, Secretary Consumers' League of Ohio

It is now a truism to assert that disease lurks in dirt, that much dirt is not visible to the eye, and that all is not clean that looks so. Nevertheless, it is not so many years since we first began to take this fact into consideration and to realize that we must make laws about it. For it is really not so very long ago that a community in this country consisted of only a few families, each of whom had enough ground to supply fresh vegetables and to pasture a good cow giving clean milk, and each of whom had plenty of fresh air, and a wood stove and chickens in the barnyard to take care of the kitchen refuse. Then each family directly controlled the major part of its own food supply.

Now many people live crowded together in one community; fresh air is at a premium. The food supply must be shipped in from the outside and must be handled by the farmer who produces it, by shippers and middlemen, and by the retail merchant before it reaches us. Or, if it is a food product, it is manufactured in a shop which we do not see and over which we have no control, and passes through many hands before it finally comes to the merchant who sells it to us. Because of gas stoves and furnaces, outside disposal of refuse is necessary, and all the water that we use is open to contamination from many sources before it comes out of our faucet. Laws, which must be almost continually altered and added to, are necessary to control this situation.

In 1906 a Federal Food and Drug law was passed which made possible much greater activity in the Federal Bureau of Chemistry. Better conditions in the manufacture of food have resulted and much better control of frauds and adulterations in food made possible. Federal laws, however, apply only to Inter-State products, and State regulations vary with the different States from good laws and very efficient inspection, such as is found in Massachusetts, to inferior laws and indifferent inspection. Ohio has fairly good laws—but the food inspection force has spent most of its time in the interests of the farmer. So far as Cleveland is concerned, enforcement of the State laws, as well as of the local regulations, must be through our own efforts.

Cleveland has very good laws, which should provide a clean water supply, pure milk, inspected meats, fresh vegetables, and



wholesome food products, as well as thorough sanitation and clean shops where food is produced and handled. If we lack any of these things, it is because of our own lack of initiative and vigilance, not because of insufficient protection by law. We can have clean food products if we want them sufficiently to demand the enforcement of the law which is there. The enforcement of the laws is more obviously the obligation of the Division of Health than of any other one department of the city government, And such inspection and enforcement is carried on through the Bureaus of Food and Dairy Inspection, of Laboratories, and of Sanitation of the Division of Health. Let us see to just what extent all that we eat and drink is protected by law from contamination by dust and dirt.

Purification of the water supply may not be as satisfactory now as it will be when the new filtration plant is finished. The water that we use is not as clear as spring water, such as was possible years ago, but it is not as dirty or oily as it might be if we were forced to take it directly from the river or lake. And it may at times taste strangely, but that very taste assures us of the destruction of death-dealing germs. Our death rate in Typhoid Fever has been cut down one-half since the introduction of chlorine into the water, and Cleveland is known as one of the healthiest cities in the country for its size. Regulation of the water supply is in the hands of the Division of Health, under the direction of the Mayor.

Responsibility for the oversight of various foods and food products, other than meat and dairy products, has been divided between the Bureau of Laboratories and the Bureau of Sanitation of the Division of Health. Inspectors from these Bureaus have the authority to confiscate and destroy all food products offered for sale which are judged unfit to eat. It is against the law to sell decayed or damaged fruit or vegetables. Anybody who offers to sell diseased, adulterated food or unwholesome provisions without making conditions known to the buyer, shall be fined not less than \$50.00. All canned fruits and vegetables and soaked goods shall be marked according to grade and quality. Every year the Bureau has seized thousands of bushels of fruit, vegetables, fish, and even candy, because of their unfitness for food, and has prosecuted food manufacturers for unsanitary conditions in their workshops.

The Chemical Laboratory of the City also has power to

confiscate bad or adulterated food products and to prosecute dealers selling them. It is not always easy to obtain convictions. Some months ago a factory was visited and 35 gallons of fruit and fruit syrups dumped for being stale and contaminated with maggots, dead flies and cockroaches. This concern was prosecuted and their case half tried—and then continued by the defense, who wished to bring in expert testimony in order to justify the presence of vermin in food products. And ultimately this case was dismissed on a technicality. In one month recently the Chemical Laboratory took as many as 12 cases into court for prosecution, but was able to obtain convictions on only 6 of the cases, and in each of these 6 cases the fine was remitted.

Too much cannot be said for the activity of the Chemical Laboratory in food inspection work. Many trips are made to various food manufacturing plants, a great many samples of food products are obtained and analyzed, and complaints and prosecutions in the case of adulterated or misbranded articles are actively pushed. Formerly analyses were made only of samples sent into the laboratory. In the years from 1910 to 1914, there was a total of 1,129 such analyses, while so far in 1915 there have been 1,794 samples analyzed, more than the combined total for the preceding four years. In 1914 the laboratory made 109 inspections in food manufacturing places, examined 572 food samples and made 900 butter and oleomargarine inspections. 212 cases were taken into court for prosecution and there were 167 court summons. In addition to this work in food products, the laboratory made a large number of inspections and analyses of the city water supply. This work has been done with a very small inspection force, which should be increased, as there is a large field of work only inadequately covered.

Under the Bureau of Sanitation inspection of shops is rather from a sanitary standpoint. In addition to the seizure of food in an unsanitary condition, the bureau annually issues hundred of orders to dealers and shopkeepers to clean up in one way or another, all of which affects very materially the cleanliness of the food supply. It was in the investigation of bakeshops that the Consumers' League first became familiar with the work of the different departments of the Division of Health. As an organization of consumers, believing that the consumer has power which can be exercised in the improvement of conditions of manufacture, the League interested itself in and made an investigation of



the methods employed in the baking of breadstuffs. Need for the improvement of conditions of manufacture was at once very evident. Through the co-operation of Miss Chadsey, of the Bureau of Sanitation, a thorough inspection was made possible of all existing bakeshops, resulting in a very general "clean up." The Consumers' League then issued an approved list of 46 shops which conformed to a definite standard of cleanliness set by the League, and has since continued to inspect and to issue this list twice yearly. On the basis of the standard adopted by the League, a new bakeshop code was drawn up and is now a law, making for greatly improved standards in all bakeshops. Basement shops are being eliminated and much stricter conditions of manufacture required. In time provision may be made in the ordinance for the wrapping and protection of bread and other bakery products after they leave the bakery. This ordinance could never have been secured without the co-operation of the Division of Health, the Master Bakers' Association, and the League, nor the improved inspection of bakeshops made possible. It is a striking example of the force of public sentiment in effecting enforcement of existing laws, and in improving existing laws. There is no doubt that we have the power, if we choose to exercise it, to control the conditions of food manufacture.

Fruits, breadstuffs, and prepared foods are only a part of our food supply that need careful protection from dirt and disease. Fresh meats and fish, as well as milk and dairy products, are possible carriers of disease germs, and milk can be very dirty and adulterated without always appearing so. How are these dangers forestalled?

This is the responsibility of the Bureau of Dairy and Food Inspection. No meat can be offered for sale which has not the official stamp of the government or city inspector. Regulations covering the slaughter of animals are definite and strict, and there are further regulations restricting the sale and transportation of meat to commission houses and retail butcher shops. Some idea of the immensity of the task before the Bureau can be had by a glance at the inspection figures for 1914. Total inspections before slaughter of cattle, hogs, sheep and calves were 495,605. Total reinspections after slaughter were 209,609. Total condemnations were 7,112. Many parts of animals were condemned as well, and as many as 14,000 pounds of meat were confiscated from markets and commission houses. Inspections at the

slaughter-houses are carried on by 16 men all told, while the inspection of markets and commission houses is carried on by one man. The report of the past year shows that he made 4,000 visits of inspection to meat markets, fish markets, sausage factories. There is no record of retail meat markets—owners are not required to have a license—so it is impossible to know how many of the shops in Cleveland receive a visit from the one inspector.

The amount of work accomplished in meat inspection is prodigious, but even then is inadequate to the needs of the city. The department of meat inspection was organized almost ten years ago and is still working with the same number of inspectors with which it was started. It is absurd to expect that one man can look after all of the commission and meat markets of the city and see that they are kept as they should be. It is a regulation of the law that all meat shall be thoroughly protected by canvas covers from dust and dirt in transportation through the city streets. And yet only two days ago the writer saw meat being carted in a filthy wagon, only half covered with a piece of dirty burlap. More inspectors would prevent such a situation, for which there is sufficient law provision but insufficient provision for enforcement. Doctor Eddy, head of the Bureau of Food and Dairy Inspection, has requested funds for additional veterinarians for the coming year, and we should exert every effort to have this request complied with, if we want adequate protection of the meat supply from contamination.

Cleveland's milk supply comes from an area 400 miles long by 100 miles wide, including parts of five States, Ohio, Michigan, Indiana, Pennsylvania and New York. It is produced on 4,000 farms from over 100,000 cows, and over 55,000 gallons are sold here daily. No farmer can sell milk in Cleveland without a permit and this permit is issued only after thorough inspection of his cows, barns and premises. These are all subject to strict regulations. A score card is used, on which a man can get a record of 100 per cent for perfect sanitary conditions, and he must total up at least 65 per cent in order to obtain or continue to hold a permit. Pure milk and cream are accurately defined by the law and upon analysis must conform to the standard set by the city, or the dairyman will be permanently debarred from shipping to the city. The chief factor in clean milk production is the dairyman.



Six inspectors look after these farms, while as many more visit the 2,000 milk depots and stores from which milk is distributed to consumers. These depots and stores must also have a permit before milk can be sold from them. The law requires that these distributing points shall be visited once a month or oftener, and that samples of milk shall be taken for analysis once a month or oftener, from all dealers. In 1914 there were collected 20,587 samples for this purpose, and over 1,000 gallons of milk were destroyed as unfit for consumption.

In spite of efficient inspection service, it has been agreed that inspection alone is not sufficient to safeguard properly the milk supply from infection. Fresh, clean milk may become infected at any time. Tuberculosis has developed without warning in cows in the best of health. For this reason milk experts long advocated the pasteurization of all milk. Pasteurization offsets the dangers of sudden infection, as it destroys the germs of tuberculosis, as well as those of typhoid, diphtheria, infantile paralysis, and other diseases. It is a simple and effective method of assuring the public of a safe milk supply. Large milk distributing plants have pasteurized their milk for some time, and in the past year an ordinance for the compulsory pasteurization of all milk after January 1, 1916, was successfully passed in the City Council. The ordinance was strenuously opposed by the smaller milk dealers, because of the expense of installing pasteurization plants, and it was not till the pressure of public opinion, through the activity of the Consumers' League and many interested organizations had become felt, that the ordinance was voted through.

Thus the public opinion, once aroused, is instrumental in passing needed legislation. It can be equally powerful in effecting more extensive enforcement of existing laws, which can be accomplished only through increased inspection. Investigation of the city's efforts to enforce food regulations has shown that most effective work is being done, but every department that is conducting inspections is very much handicapped because of lack of inspectors. And just as important as sufficient inspection is the power which the Board of Health should have to prosecute recalcitrant food dealers. Inspection acts as an educative force for a large number of food merchants. They are intelligent enough to know that the public mind has awakened to the need for precautions to insure pure food, and that it is worth their while to observe these precautions. Such merchants only occasionally

need pressure other than regular inspection. But there are still many food merchants who have no standard of cleanliness for themselves, whose customers are too poor or too ignorant to demand clean food, and such merchants find it cheaper to be dirty. Not until they have been brought into court and made to pay dearly for the privilege of running a dirty shop, do they at last realize that in the end it pays to be clean. Inspection alone is useless in such cases. The public should support the various departments of the Division of Health in their efforts to educate by prosecution, and give offenders the full penalty of the law who continue to menace the health of the people by selling them unclean, insanitary food products.

Year by year the gap between the consumer and the original producer of food products grows wider and the chances of exposure to contamination more numerous. It has been so easy to assume that outward appearance is an indication of the cleanliness of an article, and we have been content to assume the "out of sight, out of mind" attitude towards food production. Until the public is even more thoroughly aroused to the relation between clean and wholesome food and good health, the unscrupulous dealer will evade the law and defraud consumers, in spite of every effort of city officials to prevent it.

---

**Beware Spurious Aspirin and Neosalvarsan.**—According to a circular letter sent to the Department by the Bureau of Chemistry, U. S. Department of Agriculture, considerable quantities of spurious aspirin and neosalvarsan are being peddled around in a way that makes it difficult to find interstate shipments. The spurious aspirin is a mixture of either calcium acid phosphate and starch, cream of tartar and citric acid with some alum, or milk sugar, starch and calcium acid phosphate. The neosalvarsan consists of common salt with naphthol yellow S.

While the Department of Health has notified the drug trade to be on guard against these vicious frauds, it is clear that this warning affords absolutely no protection against certain unscrupulous druggists more interested in the size of their profits than in the welfare of the patients for whom these drugs may be prescribed.

We suggest that physicians who have reason to believe that substitution has been practiced in prescriptions ordered by them send a sample of the medicine, together with a copy of the prescription to the Department of Health for examination.

---

**Street Dirt, Unprotected Food and Disease.**—Prof. C. H. LaWall, chemist of the Pennsylvania dairy and food commission, is said to have found the following assortment of objects and substances in raisins exposed for sale in a Philadelphia street: pieces of prunes, beans and rice; strands of human hair and cat fur; cotton and wool fiber; straw and bits of bran; insect wings and legs; cigar and cigaret ashes, and a yellowed cigaret paper. While it does not appear that any of these unappetizing accessories were exactly proved to be carriers of contagion, the findings strongly suggest the possibilities of infection from food sold from uncovered pushcarts and stands.—*Jour. Amer. Med. Assn.*



## THE ROLE OF PURE MILK IN THE PREVENTION OF DISEASE

By ARNOLD F. FURRER, M. D., Assistant Secretary of the Cleveland Milk Commission.

Pure milk is now recognized to be quite as significant of the sanitary index of a community as pure water.

Milk-born epidemics are as reprehensible as is drinking water contaminated by sewage.

Given a pure milk supply and our mortality will be substantially reduced. Especially is this true of infant mortality.

Several years ago the Government issued Bulletin No. 41, in which it was shown that over 500 epidemics then had been traced to milk contamination.

Tubercular cattle may disseminate infection, and it has been estimated that about 20 per cent of all cases of tuberculosis occurring in infants and children are of Bovine origin. Local disease of the udder (mastitis) has been found to be the cause of streptococcus sore throat epidemics.

Contamination may be introduced from human source, the most frequent being typhoid fever, scarlet fever and diphtheria. The first and last have often been spread by "carriers."

Probably the most common milk contamination, however, is manure, and this added to faulty methods of milking and insufficient cooling are the chief sources of the high bacterial content of the ordinary market grade of milk.

*Grades of Milk.*—For purposes of convenience in this city we may divide milk into three grades, A, B and C.

*Grade A.*—Certified milk conforming to certain established standards required of all certified milk and supervised by a medical Milk Commission. In this grade may also be included certain special milks intended for infants or produced on model farms and specially supervised. The milk from these farms comes from frequently tuberculin tested and retested animals, has a low bacterial content and like all high grade milk is expensive.

*Class B.*—This grade may be designated as the ordinary market grade of milk, pasteurized (heating the milk for not less than 20 minutes to 140 degrees F.).

*Class C.*—Ordinary market milk, unpasteurized. Grade A may be consumed raw or modified especially for infants. It is used chiefly by the well-to-do and middle classes.

Grade B is used by all classes and is safe if properly pasteurized.

Grade C is chiefly used by the poor or uninformed, and used raw is a menace to the consumer and to the community.

The present legal requirements in regard to Pasteurization will soon do away with this last grade of milk.

**Essential requirements for the production of pure milk:**

(1) The herd must be healthy and frequently tested for tuberculosis.

(2) The cows must be curried and washed daily.

(3) The barns must be light, well ventilated and clean. They must be free from dust and manure.

(4) The milkers must be healthy, free from communicable disease or exposure thereto, have clean hands and be dry milkers.

(5) The fore-milk must be discarded.

(6) The milk should be areated and cooled to at least 40 degrees F. within 15 minutes of milking.

(7) All utensils and receptacles coming in contact with the milk must be adequately cleaned and sterilized.

(8) Milk should be transported expeditiously and reach the consumer not warmer than 50 degrees F., and within 36 hours of milking.

*Pasteurization.*—Milk should be evenly heated to 140 degrees F. for not less than 20 minutes, bottled in sterile bottles without coming in contact with the hands of the bottler.

The bacterial content before and after pasteurization, the length of time heated and the degree of heat to which it is raised should be known and recorded.

**Summary**

Pure milk is produced in comparatively small quantities on model farms with more or less elaborate equipment and properly supervised.

This equipment and supervision is costly, rendering the product too expensive for general use.

The ordinary market milk may be rendered perfectly safe for human consumption by pasteurization. Such pasteurization should be supervised.

The elimination of market milk herein described under Class C, at present unpasteurized, should do away with: (1) All cases of tuberculosis of bovine origin; (2) The milk-born epidemics from such communicable diseases as typhoid fever, scarlet fever, diphtheria and streptococcus sore throat; (3) One of the chief causes of infant mortality, especially as prevalent in the summer, viz: "bad milk."

---



## WELFARE WORK IN THE MODERN FACTORY

By WALTER A. HALDY, M. D., Cleveland

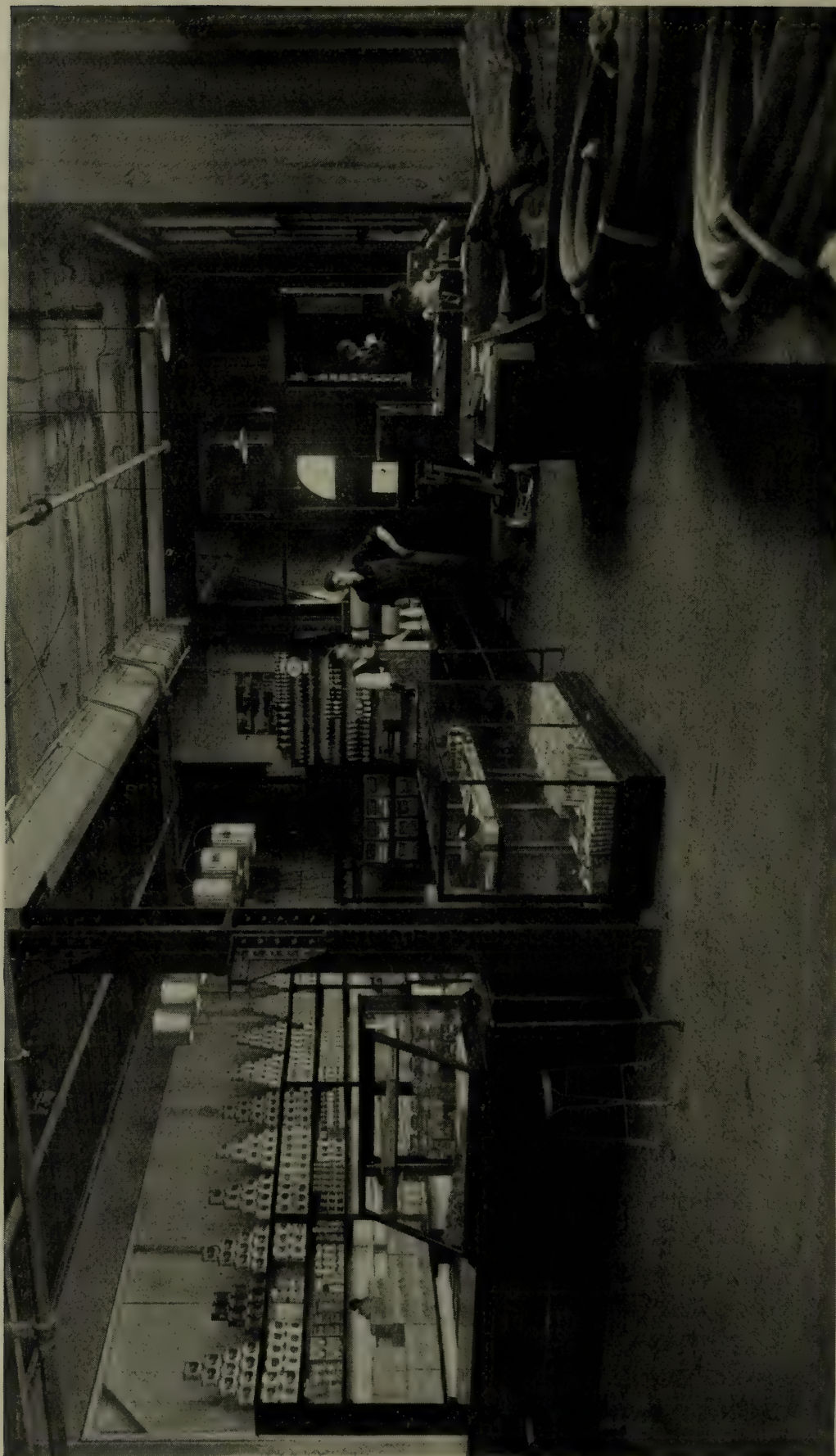
A very practical and lasting transformation is going on in the average factory today. Safety-first devices are making it increasingly difficult for the workman to receive injury. And it is being learned that the health and welfare departments, which one finds now so frequently installed in the larger factories, are enormously increasing the general efficiency in these institutions, and increased efficiency is just another word for increased dividends.

The following remarks apply to the modern shop: A well-equipped dispensary is located in an easily-accessible part of the shop. The equipment compares favorably with that of the average hospital dispensary. (The National Lamp Works of The General Electric Company has established a standard equipment for the dispensaries and rest-rooms throughout its numerous plants.) A trained nurse is in charge of the dispensary. She is usually allowed to prescribe a few of the simpler remedies, such as cathartics, arom. spts. of ammonia, Elix. Vib. op. Co., etc. Suspicious-looking sore throats are sent home for treatment by the family physician. In addition to dispensary work the nurse makes frequent rounds of the shop, trying constantly to keep in touch with those needing her help. Her advice and sympathy are in constant demand. Not content with these duties, she or an assistant visits the homes of the sick and reports conditions to the head of the department. Nurses from the local Visiting Nurses' Association co-operate with the welfare departments, making house calls for 75 cents per visit.

Serious accidents are, of course, referred to the visiting surgeon, while the nurse is allowed to dress small cuts and wounds. The surgeon calls at regular intervals, at which time all cases demanding his attention are referred to him. In the large shops or mills where accidents are frequent, a resident surgeon is on duty during working hours. Visiting dentists also inspect the employees' teeth; when in need of attention, he cares for them at a minimum fee, or they have the privilege of consulting their own dentist.

An oculist calls at intervals. The employees are given glasses at cost.

Housing problems are often serious ones. The welfare department is on the alert to see that its workers, especially girls,



Community Store of the Cleveland Hardware Company

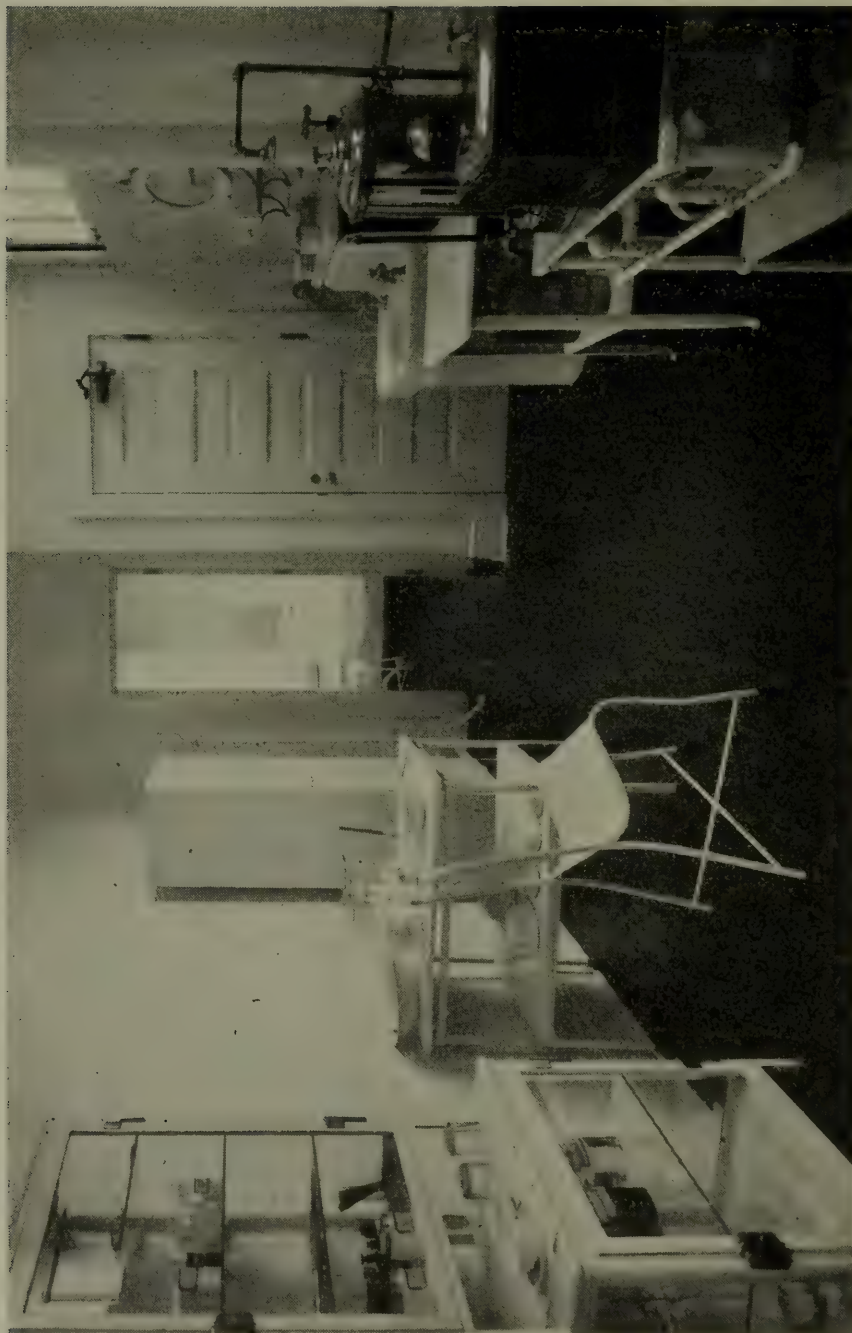


become located in desirable localities, also to be of help in the home circle. These are difficult problems, surely. Some take the stand that when the employee leaves the shop, the responsibility for his welfare is ended so far as the employer is concerned. But, on the other hand, nothing seems too much for the progressive leaders in this welfare work. In an endeavor to broaden the mind, instructive lectures are given on live topics. Recreation is encouraged and financially supported. Dances and parties are of frequent occurrence. (The National Lamp Co. has established an elaborate summer camp for its people, with an artificial swimming pool and day and night tennis courts.) Mutual benefit insurance societies protect the workingman against sickness and accident at a small cost. Loans, without interest, are given the needy, after an investigating committee has passed on the claim.

Community stores buy provisions of all kinds in large quantities, selling articles at cost. The Cleveland Hardware and the White Company may be mentioned as examples where these stores are successfully conducted on a large scale. Cafeterias serve excellent meals at cost. Here the workers may sit down to a table and eat a plain but well-cooked meal or bring forth his lunch and supplement it with the cafeteria menu.

In some firms the employee, when favorably known, is allowed to purchase stock in the company. It is usually a reasonably good investment and immediately gives him a personal interest in the operation of the concern he is working *with*. Individual lockers, shower baths and modern hygienic lavatories are fairly common now. Increasing attention is paid to proper light and ventilation. Painting corners white is one of the many innovations introduced in the campaign against dirt. It lessens the temptation to spit or throw refuse into a clean white corner.

The number of automatic devices which have been and are being constantly invented to protect the workman from injury, is astounding. In many cases they are the result of the ingenuity of the workmen themselves. They are encouraged by promotion or monetary remuneration to stimulate their inventive faculties. The General Electric Company of Berlin has a large museum, one section of which contains a small but complete working miniature of every safety device employed in their immense shops. A polite guardian takes you through and explains each machine. Their dispensary is very much the same as those



Standard Dispensary Equipment of the National Lamp Company



in this country. In addition to the nurse, each factory department has several workmen who have passed first-aid examinations and are referred to in case of emergency. The names of these experts, together with the department to which they belong, is posted in a prominent place for ready reference. On the walls at convenient intervals are hung little red-painted boxes, with an easily-opening door, each containing a blanket, and below stand two pails, one with water, the other with sand. Once a month a committee composed of shop foremen and workmen make the rounds, and offer suggestions pertaining to the general welfare of their fellow-workers. Employees arriving late to work are fined in a small sum, which is contributed toward a community or sickness fund.

In applying for work today the present physical requirements are that the applicant *looks* healthy, but there seems to be an increasing tendency to regard the applicant's physical condition with more than passing interest; in fact, from present indications, he will soon have to *be* healthy. A fairly rigid physical examination, including urine analysis and blood pressure records, is required in some plants.

This movement is meeting with considerable opposition in many quarters as being too radical. It is true that a general movement of this sort would some day leave a small army of rejected applicants in its train, unless other provisions were in time made for them. The factories employing a less rigid censorship would naturally get many of the men refused in other shops, with results not difficult to foresee.

Workmen occasionally look with considerable suspicion upon the incipient welfare movement, questioning the motives back of the philanthropy, and it is often necessary to use a process of slow feeding, that they may be able to assimilate it. Once their confidence is gained, however, they become hearty and enthusiastic co-workers. At the present time many of the shops are "standing pat" on some of these important problems, preferring to let the "other fellow" do it first. This country is justified in pointing with pride to the many concerns which are doing such splendid pioneer work in this exceedingly broad and humane field.

---

## SAFEGUARDING THE QUALITY OF MEDICINES

By J. F. WOOLSEY, Ph. C., Cleveland.

That the general public will be well cared for, in the way of medication, is quite evident from the care which the compilers of the forthcoming United States Pharmacopoeia are exercising in its formation.

While Federal and State laws provide for safeguarding the quality of medicines, yet the necessity of standards upon which to base action is of primary importance. These standards are provided by the Pharmacopoeia, which has been legalized. The need of careful revision is also quite evident, in that the work must be practical as well as scientific.

Rapid progress, made in the development of scientific medicine, places increased responsibilities upon the pharmacist and chemist in the production and proving of medications. The physician also shares in the responsibility of knowing the quality of drugs he prescribes.

A study of past Pharmacopoeias shows them to contain nothing which could be termed "nostrums," and it is quite certain that the new work will contain none. What changes are made in the way of additions or deletions will be entirely progressive and not the reverse.

The foregoing indicates clearly that those whose work is along medical lines will be guided largely in their professions by the Pharmacopoeia. As "nostrums" find no place in the volume, so will "nostrums" receive no consideration from those who are capable.

These statements are neither intended to infer that products outside the Pharmacopoeia are not to be used, nor that new products are not to be tried and proven.

The Pharmacopoeia has been developed through the various editions to fairly cover the field of general medicine, and in the hands of competent physicians and pharmacists serves the needs of the general public quite well. The volume is revised at stated periods and in this way progress is recorded, proper recognition given worthy products, and standards are revised as improvements in manufacture develop and scientific knowledge is acquired.

The revision of the text is controlled by a General Committee of 50 men of recognized ability in medicine and pharmacy, or closely allied professions; chosen from delegates of the



many Medical and Pharmaceutical Associations attending the Pharmacopoeial Convention which assembles each ten years. This committee receives assistance from many outside sources, both scientific and commercial. Three members of this General Committee are residents of Cleveland, actively engaged in practicing their professions of medicine and pharmacy. No compensation is given those who serve as members of the General Committee; professional pride offers the only stimulus to their efforts, and knowledge of work well done the reward for the sacrifices made.

The United States Pharmacopoeia is strictly ethical, as well as scientific and legal, and quite properly is, and should be, the most important volume of reference for both the medical and pharmaceutical professions in safeguarding the quality of medicines.

---

**Some Activities Which Cannot Be Standardized**—the following letter is reproduced because of the excellent picture it gives of the social service work voluntarily performed by many of the Health Department nurses in addition to the duties regularly assigned to them:

"The Head Doctor and the Board of Health:

"I am thanking you for sending out such good nurses for the taking care of babies. The nurses from P. S. 148 saved my baby's life this summer, not only saved my baby's life but six more children and me and my husband. When the nurse came the beginning of the season, she asked if there are any small babies in the house. I told her that I have a baby three months old and it does not feel well. She asked me what is the matter with the baby. I told her that the baby's stomach is not good and he is weak. So the nurse told me to give the baby barley and milk sugar. I was ashamed to tell her that I have not any money to buy it, and I have not got any money to buy milk for the baby, because my husband did not work for six months. The next day the nurse came again and she asked me if I bought the barley and sugar, so I said I have not got no money to buy milk for the baby neither. I give the baby plain sugar water because my husband is not working and I have not got a piece of bread in the house for my seven children. So the nurse brought me sugar and barley. Then she went in the Jewish Aid Society and tried to get milk for the baby. The next day she came and asked me if I received milk for the baby, so I said 'Yes.' Then she saw that I keep the milk under the water because I did not have any ice. Then she gave me fifteen cents to buy ice until she will give me an ice book. When she came the next day she brought the ice book. She asked me whether my husband is working, so I told her 'No.' She went into the Society again and she tried to get my rent; if not, the landlord would put me out. Then she came in the next day; she saw that we have not got anything to eat. On the next day she brought us a ticket for bread by Mrs. Ducker in Broadway. Then she came in like that every day to see how the baby is. This time she sent away the children to the country. Since the nurse came around the baby's health is improving. That's how she saved my baby's life. If not for the nurse we would starve. This made me write a letter to you and thank you for sending us such good nurses what save people's lives.—Mrs. R.—"*Bulletin, New York Board of Health.*

**Industrial Hygiene.**—One of the most important results effected by the present "Safety First" campaign is that our eyes have been opened to the fact that it is not sufficient to make industries "Safe" from an accident standpoint; they should be "Safe" from a health standpoint as well. In other words, no industry ought per se to exert an injurious influence upon the health of the worker; in no industry should occupation therein entail curtailment of the period of economic activity.

Any plan for education must, therefore, be general in nature because of the close interdependence of all the units of society. Thus, the education of the medical profession is needed for the purpose of stimulating the interest in the study of diseases in relation to occupation, the improvement in collection of clinical data bearing upon occupational diseases, and the promotion of research work along those lines so that practical recommendations for advances in the sanitation of industries may result.

The education of the general public is required, first, because the history of all our constructive health legislation of the past shows that an enlightened public opinion is necessary to success, and, second, because it is impossible so to delimit the field of industrial hygiene as to separate it from the hygiene of the total environment. Moreover, employers of labor are an important class of the general public. Their co-operation is necessary if industrial health conditions are to be improved. Finally, the workers themselves are to be educated. In order to secure substantial improvement in the health conditions of industries, we must secure knowledge, on the part of the worker, of the general principles of industrial hygiene and the care of his own body. Otherwise provisions for his health and safety will, in the absence of his intelligent co-operation, be largely nullified.

Beginning with the medical profession, the recognized source of most of our hygienic information, it is only too plain that study of the relation of disease to occupation is regarded as a specialty and some thing with which neither the general practitioner nor the specialist in other fields is very closely concerned. Yet industrial workers constitute by far the largest class of medical patients. It is evident to anyone who examines the clinical records of the average hospital that with a wealth of material for study, with but rare exceptions, scant attention is paid, for the most part, to the relation of industrial health hazards and of occupational diseases to the morbid history of patients in such hospitals. Even the occupation of patients is imperfectly ascertained, the data on this point in most hospital histories being so vague and unreliable as to be practically valueless.

The influence of industries upon health is a subject which has been hitherto sadly neglected both in our medical curricula and at the bedside. There is therefore need to educate the medical profession to the importance of industrial hygienic measures and the study of the relation of occupations to diseases.

Inasmuch as hospitals are the chief sources of clinical material and hence the natural locations where intensive studies of diseases may be made, it is clear that here must begin the first steps in the education of the medical profession. As Hayhurst has pointed out, the first thing necessary to the utilization of hospitals as centers of education in industrial hygiene, is the adoption of a uniform nomenclature which will exactly designate the occupation of hospital patients. In taking histories, similar standards are required which will furnish information as to the previous industrial history of the patient and the relation, if any, of this to his previous or present morbid history. At all clinics for the instruction of medical students stress should be laid upon these points by the demonstrator so that all such students may gain an idea of the important bearing of such data upon disease.—*Reprint, U. S. Public Health Service.*

---



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902.

Capital Stock, \$6,000

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH F. STONE  
2318 PROSPECT AVENUE

## ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.  
ROGER G. PERKINS, M. D.

JOHN PHILLIPS, M. B.  
T. WINGATE TODD, F. R. C. S.

## COLLABORATORS

C. E. FORD, M. D.  
H. E. HANDERSON, M. D.  
S. W. KELLY, M. D.  
J. J. R. MACLEOD, M. D.

DAVID MARINE, M. D.  
V. C. ROWLAND, M. D.  
H. L. SANFORD, M. D.  
TORALD SOLLMANN, M. D.

G. N. STEWART, M. D.

## EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.  
*Vice-President*, C. E. BRIGGS, M. D.

*Secretary*, C. A. HAMANN, M. D.  
*Treasurer*, H. G. SHERMAN, M. D.

## BOARD OF DIRECTORS

C. E. BRIGGS, M. D.  
F. E. BUNTS, M. D.  
G. W. CRILE, M. D.

C. A. HAMANN, M. D.  
C. F. HOOVER, M. D.  
S. H. LARGE, M. D.  
J. B. MCGEE, M. D.

J. P. SAWYER, M. D.  
H. G. SHERMAN, M. D.  
W. H. WEIR, M. D.

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

## EDITORIAL DRUG REFORM

Physicians have come to the realization that drugs are as a two-edged sword—under proper conditions, striking against the disease; otherwise, against the patient's health. The first condition for their proper use is adequate knowledge of their composition and purity; of their actions and malefactions; their field and limitations. Slowly and painstakingly—sometimes painfully—this scientific knowledge has been gathered, is still being gath-

ered, by chemists and pharmacists, pharmacologists and clinicians, with increasing thoroughness, care and discrimination.

Where wisdom fears to venture, unwisdom and cupidity find ample room. The wise physician knows that there are ills that drugs cannot cure; that drugs generally only aid or relieve; and that to obtain even this aid efficiently and safely, the existing scientific knowledge is none too great. Not so the unwise. He who sees in disease only a name, to him a name is a sufficient cure. Let there be a mixture with a convenient and suggestive name and a pleasant taste, a compendious index of diseases and symptoms—and a lively imagination—and the cure is accomplished. Few things could be easier, and few more false. It is not surprising that the “man on the street” should fall into these errors; it is sad that any physician should be misled by the sophistry of interested drug vendors.

Physicians have the moral obligation to instruct the public in matters of health. Preaching before practice is of little avail. It behooves the medical profession to make at least a reasonable effort to clean its own house before it passes the broom to the public. Realizing this responsibility, the American Medical Association some years ago, established its Council on Pharmacy and Chemistry. This Council is strictly an educational agency—it collects and disseminates knowledge about drugs, especially those drugs that are advertised to physicians and that are not described in the legal pharmacopeias. Physicians are thus put in a position to discriminate. Many have done so; others will; a few may never see the light on this earth.

Journals can no longer claim that they mislead their readers in good faith. Some—the *Cleveland Medical Journal* among the first—have frankly acknowledged their obligations, and sacrificed a lucrative income from advertisements; others are still occupied in compounding the matter with their conscience. Manufacturers are in a similar position. Those who are on the side of scientific progress—or to put it materially, those who realize that honesty is the best policy—are taking the opportunity to separate themselves from the dishonest and ignorant.

Altogether, the medical profession may safely advise the public on the subject of drugs without laying itself open to the charge that it preaches what it is unwilling to practice.

Meantime, the public itself has had a somewhat similar awakening. The progress of the profession has necessarily



spread more or less to the laymen. All sorts of educational agencies have been working, to convince the public that individual and national health is too precious an asset to be entrusted to any quack who may spell his praise in printer's ink. Legislators have passed food, drug, and anti-narcotic laws which have aroused interest and discussion. Even the "drugless cults" have somewhat offset their harm by causing the public to reflect that drugging is not a panacea for all ills. All this has not been without effect. The public is in a receptive mood; it is not convinced, but wishes to learn. Legislators are prepared to follow public opinion. The purveyors of patent medicines are watching events.

What, under these conditions, should be the attitude of the medical profession? Plainly, it should continue to be what it always has been: to stand aggressively for the protection of the public health, without any compromise. In doing so, it is true, physicians will expose themselves to the imputation of selfish motives. Selfishly commercial minds cannot or will not understand the unselfish ideals of a profession—that is their loss. Physicians, however, must be careful not to give a semblance of reason to the charge; for that would diminish the effect of their attitude. They must confine themselves to informing the public of the facts; and to guarding the health of the public at large, and of their own patients in particular.

No one, in a free country, can force a diseased individual to seek effective treatment or prevent him from using an ineffective treatment, unless his disease imperils the health of others. At that point, and not before, the government can and should take personal measures. However, it is a well recognized function of the government to protect individuals against their own ignorance. It does this when it forces the child to go to school; it does this when it places the swindler in jail.

On exactly the same principle, the government has the right and the duty to protect the uninformed public against the flagrant evil of the patent medicine traffic—and the patent medicine traffic as now carried on is a flagrant evil and series of evils. The government should protect the public against advertisements that are framed to suggest or create imaginary ailments, with their attendant miseries; it should protect the public against being deluded by false promises of cure; against the specious relief that merely hides the disease and blinds the patient to its dangers;

against drugs that may and do work positive harm; against the veil of mystery that makes these abuses possible.

The individual layman cannot protect himself against these dangers, and has a right to expect that the government will prohibit the indiscriminate sale of any medicine that may be harmful to him. He has a right to expect, when the government permits the sale of a patent medicine, that the medicine will do him no harm; just as he has a right to expect that any physician whom the government permits to practice, should be competent.

These are some of the reasons why physicians oppose patent medicines as they are now exploited; and for these reasons, physicians should take an absolutely uncompromising attitude, and use every opportunity to educate the public. The patent medicine interests naturally try to obscure the issue. By the art in which they are so skilful, they aim to suggest to the public that physicians are opposed to patent medicines, in order to drive patients to their offices. They "forget" to mention that physicians have never conducted a "campaign" against really efficient preventive public-health measures, no matter how many prospective patients were involved. No physician has ever refused to give diphtheria antitoxin because this would diminish the number of his visits. A short memory is a very convenient asset for self-interested persons. It is not so convenient for the public—but it is all too frequent. Physicians must, therefore, make it plain that their stand is not against patent medicines, but for the protection of the health of the public.

T. S.

---

**Salt, Sugar, Vinegar and Pepper, Will Not Cure Diphtheria.—**

Some time ago, inspectors of the Department of Health, City of New York, purchased a bottle of "Dr. E. H. Barton's Antidote" from George W. Felter, of Brooklyn, the manufacturer. This package was labeled "A Certain and Speedy Cure for Scarlet Fever, Diphtheria and Sore Throat." Additional packages of the same preparation were also procured from one of the large wholesale distributors and also from several retail druggists. Upon chemical analysis this medicine was found to contain the following:

Common Salt.

Sugar.

Vinegar.

Caramel Coloring.

Oil of Peppermint.

An extract, probably of red pepper.

Prosecution was instituted by the Department of Health on the ground of false and misleading statements, with respect to therapeutic effect.

On November 24, 1915, after two days' trial in the Court of Special Sessions, the defendant was found guilty and fined \$100, thus confirming the contention of the Department that the claims made for this alleged remedy were false.



## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. McGEE, M. D., Cleveland

**Exophthalmic Goitre:** Israel Bram, in the *New York Medical Journal* for November 27th, considers the nonsurgical treatment of exophthalmic goitre. He believes that diagnosed early, almost every case of exophthalmic goitre is amenable to proper nonsurgical treatment, and at least 75 per cent of all other cases may be cured without operation. He considers prophylactic, hygienic and dietetic measures, and as to medical means believes that quinine hydrobromide probably yields the best results. In this disease there seems to be extraordinary tolerance for quinine, and the hydrobromide may be given in ten-grain doses three or four times daily without producing more than a slight buzzing in the ears. It may be given months or even years without deleterious results. The usual dose is five grains three or four times a day. More cases of cure of exophthalmic goitre has resulted with prolonged use of quinine hydrobromide than with any other single drug. His favorites are first a combination of quinine hydrobromide, 5 grains; ext. of suprarenal glands, two grains, and arseniate of iron, one-eighth of a grain, in capsule form; one of these is to be taken three or four times a day. He also favors a mixture of five grains of quinine hydrobromide with two grains of ichthyol in capsule, three or four times a day. Lecithin has been successfully employed by H. J. Berkeley in four cases of Graves' disease, resulting in a cure. He states that this substance is probably an antithyroid hormone. It is especially indicated where nervous symptoms are prominent and should be supplemented by a liberal diet to accomplish prompt results. He administers it in solid form, two grains with five grains of quinine hydrobromide in capsule after each meal. Sodium phosphate is said by some authorities to possess properties antagonistic to the toxæmia of Graves' disease. In any event, its use in doses of one dram in a tumblerful of hot water every morning aids the chances of recovery. Sodium salicylate in ten-grain doses four times a day has resulted beneficially, even in some cases to almost complete relief. Sodium glycerophosphate has also been found to reduce the size of enlarged thyroids in this condition. In cases which do not respond to quinine, the calcium salts should be tried. That iodine is capable of aggravating the symptoms of this disease cannot be denied; on the other hand, the numerous exceptions to this rule afford food for thought. Iodine locally must be cautiously employed, and with the same reservations as the iodides. The red iodide of mercury ointment should be used carefully and diluted. It is painful if carelessly applied. Cardiac or vascular stimulants are to be used in the presence of circulatory weakness only. Ergot and digitalis are sometimes useful, but when gastric irritability is present, strophanthus should be selected. Nerve sedatives are important, the bromides being best. When insomnia and polyuria are troublesome, Hyoscine hydrobromide in 1/250 grain doses twice daily is quite valuable. Organotherapy promises to be the source of the real specific in the treatment of hyperthyroidism.

**Symptomatic Treatment:** In the *American Journal of the Medical Sciences*, Joseph L. Miller writes as to the value of symptomatic drug treatment. It is probably true that with the development of specific drug therapy and biological products the physician has become more impatient with and less interested in treatment directed toward giving only temporary relief. Other important reasons, however, must be considered. The profession each year contains more and more men with careful scientific training. The advance of pathological physiology, pharmacology and experimental therapeutics has furnished them with certain knowledge, and especially a new method of applying it. As a result of all this, there has developed, it appears to him, a certain healthy skepticism in regard to drug therapeutics. Symptomatic treatment, however, when applied to the correction of undesirable symptoms by agents that have been demonstrated to correct this disturbance is strictly scientific, and in this respect is placed at once on the same level

as specific therapy. There is another group of conditions in which symptomatic treatment is not only strictly indicated, but in which the agents are at hand to give relief. Morphin, when administered to a pneumonia patient with acute pleurisy, not only relieves the pain, but deepens the respiration, improves oxygenation of the blood, promotes sleep, and thus becomes far-reaching in its effects. In an acute attack of pulmonary edema, morphin is of considerable value, in a measure due to its relieving the patient's fears and thus lowering the arterial blood-pressure, and so permit of a restoration of function of the left ventricle. Morphin in acute biliary or renal colic relieves pain and at the same time relaxes muscular spasm, so allowing the calculus to escape. There is another group of conditions in which symptomatic treatment may give only transitory relief, but when combined with other agents may give prolonged relief. In addition, there is a long list of drugs employed symptomatically, proven to be without value, mentioned or recommended still in modern high-class text-books. In order to determine the value of symptomatic treatment, it is very essential that the observer be familiar with the course of untreated disease. Individual variations must always be taken into consideration. Symptomatic treatment is most important not only from the standpoint of the patient, but also for the purpose of clearing up the field of clinical therapeutics, and he who undertakes a careful study of symptomatic therapeutics will be rendering a lasting service to medicine.

---

**Uterine Fibroids:** *American Medicine*, in the October number, comments on the advances in treatment of uterine fibroids. For a number of years it seemed to be quite settled that the only satisfactory treatment of uterine fibroids was recourse to surgery, and in the literature the surgeons seem to have had it all their own way. In the past three years, however, there seems to have been an increased activity in the study of uterine hemorrhage and fibroids, for numerous articles on the purely medical side of this subject have appeared in American medical literature. A study of the comparatively recent literature indicates that the treatment of uterine fibroids and the associated menorrhagia is divided into three distinct categories: 1st, the local use of radium, 2nd, the application of the X-ray, and, 3rd, the administration of mammary extract. It has been known for a number of years that the X-ray exerts a remarkable specific inhibiting effect upon the ductless glands, as many a bold Roentgenologist has learned to his cost, for the majority of the fatalities amongst physicians resulting from their intimacy with the X-ray are undoubtedly due to profound changes in the glands of internal secretion, which were directly or indirectly the cause of death. The mamma has been demonstrated to be an internal secretory organ and suitably prepared extracts of these glands are shown to exert an antagonistic action to the ovaries, just as do the X-rays. The belief is warranted that our most potent remedy for uterine fibroids and the associated hemorrhage is radium, and since this is not available by more than a very small fraction of the medical profession, and certainly altogether out of the question in general practice, the next best procedure is the use of mammary extract, which can be easily secured, and used in most cases with much satisfaction. The value of the X-ray in certain cases is not denied, but it should not be used save only when all other medical procedures have failed, and this does not seem to have been done in most of the cases reported.

---

**Nephritic Edema:** The *Medical Record*, in its number of December 4th, treats of the problem of nephritic edema. The edema of nephritis, as well as that resulting from cardiac decompensation, cannot be considered apart from changes in the blood, changes in the capillary wall, and changes in the tissues. Leo Hess contributes an interesting study of this subject to the *Zeitschrift für Klinische Medizin*, noting first that the edemas occurring in nephritis are not all of the same origin. The question arises whether there may not be some constitutional factor that determines the presence of edema in cases of



chronic nephritis. Of the various theories advanced, none is entirely satisfactory, for they fail to take into account all of the factors involved. The most important of these appears to be the capillary wall. Experiments prove that injury of the vascular wall is a necessary factor in the development of edema. All of the toxic types of edema mentioned are independent of any cardiac or renal factor, and are probably the result of an injury of the lipid constituents of the capillary wall. The conclusion is drawn that the condition of the vascular wall is the important factor in the production of edema. Even in cases in which there is obviously close connection between the edema and cardiac or renal insufficiency, the localization of the edema suggests that the condition of the vascular wall plays an important role. One of the striking phenomenon frequently present in cases of nephritic edema is the persistence of this condition in spite of a relatively good diuresis. This fact furnishes additional evidence in support of the view that the condition of the vascular wall is the important factor in the genesis of edema.

**Lymphoid Leukemia:** In the *British Journal of Children's Diseases* for February, 1915, H. D. Rolleston and J. D. Rolleston report a case of chronic lymphoid leukemia with much temporary benefit from benzol treatment. The patient, a boy aged 6½ years, was pale, anemic, constipated, listless and obviously very ill. There were numerous hard, enlarged, painless glands in the cervical, parotid, submaxillary and occipital regions, axillae and groins. There was some dyspnea, but examination by the X-ray of the mediastinum revealed no enlarged glands. The heart was slightly enlarged, and a systolic apical murmur was present. The spleen was distinctly palpable on deep inspiration. The eyes were swollen and puffy, the forehead somewhat edematous, and the superficial veins in that region dilated. Examination of the blood pointed to lymphoid leukemia—large lymphocytes being in great excess. The total leukocyte count was then 60,000. Benzol treatment was commenced with an initial dose of m vi per diem, gradually increased to m xii and m xiv per diem. This dose was continued from January 25th to February 12th, when the benzol was stopped altogether. There was a progressive diminution in the total leucocyte count during the treatment. The general condition appeared to be greatly improved; lassitude and weakness disappeared, his appetite improved, and the edema of the head passed away. On the other hand, the spleen remained practically unchanged in size, the glandular enlargement did not become less, and the patient did not put on weight satisfactorily. After the benzol treatment was stopped, the leucocyte count was at one time as low as 2,900. He was afterward readmitted to the hospital, when the leucocyte count was 123,000, the small lymphocytes being the predominant cells present. Benzol m ix per diem was again given and in ten days the count had fallen to 15,000, with a general improvement. Later, however, fever developed, a throat culture showed diphtheria bacilli, and although 15,000 units of anti-diphtheritic serum were used, the child passed into a septicemic state and died. Blood examination showed a well-marked leucopenia—1,400 leucocytes on May 14th and 1,600 on May 15th, the death occurring on May 20th. The treatment of leukemia by benzol was originated by von Koranyi, who based it on Selling's clinical and experimental observations that benzol poisoning produces leucopenia which persist after the cause is removed. Benzol appears to inhibit the leucoblastic tissues. The terminal leucopenia in this case, though remarkable, is not unparalleled. Spiegler has recently reported a case and quoted others from the literature in which the leucocytes in myelogenous leukemia dropped almost to zero before death. In Spiegler's own case they numbered 1,400 and then 400, and in two others they fell from 998,000 to 1,720 and from 56,000 to 5,300, and then to 200.

**Constipation:** Lewis H. Adler, Jr., in the *Therapeutic Gazette* for November, states that no one plan of treatment can apply to all cases of constipation, but in a general way mentions the principal factors to which attention must be paid, if success is to be obtained in the treatment of this malady. (1) A careful study of the patient's con-

dition as regards general health, and whether the constipation is actually obstipation. Appropriate measures should be employed to relieve these conditions when present. If hypertrophy of the anal sphincters or other rectal trouble exists, prompt treatment is indicated. (2) Diet—Attention to the diet, which should be regulated only as indicated by a study of the individual case. In a general way it should consist of vegetables, cereals, fruits, and an abundance of fat. Stewed fruits, especially prunes, apples, oranges, figs, etc., materially assist the general treatment. (3) Water—Clam broth taken before breakfast, or hot water with a pinch of salt, is often of benefit. If there are no contraindications, the ingestion of water freely between meals is beneficial. (4) Medication—The use of all laxative and purgative medicines should be discontinued. The patient should be ordered to go to the closet at a fixed time, say five minutes past seven, and not, as often directed, at seven o'clock, as it is regarded by patients as being that hour any time prior to eight o'clock. A good time for many patients to attend to this function is immediately after breakfast. Some patients find an evening hour preferable. It is his custom, in starting the treatment of these patients, to direct the employment of a glycerine suppository daily for one week, to be inserted at the fixed time of going to the toilet. After the first week, the suppository is to be used on alternate days, and only for an additional week. This is a routine method, and is employed to encourage the bowel to resume its normal function at a fixed and definite time. (5) Exercise and bodily movements. In prescribing exercise, it is important to regulate carefully the character and amount of work to be done, as many persons are apt to do as much if not more harm by over-exercise than by none at all. (6) Massage—Electricity and the use of the vibrator. These measures he finds essential in the treatment of all cases of constipation in which the patient is desirous of breaking away from his former habit of constant drug-taking, etc. He states that he could cite a considerable number of instances in which by regulating the hour of defecation, correcting the diet, advising proper exercise, and by massage and the use of electricity and vibrator, he has cured chronic constipation of years standing.

---

**Arbutin:** In the November number of the *American Journal of Clinical Medicine*, Charles F. Lynch writes that during the past twelve months in the management of urinary diseases in the senile male he has tried a remedy that has afforded his patients a considerable measure of relief. This is arbutin, a glucoside obtained from uva ursi and allied species of plants. Arbutin passes through the digestive tract largely unchanged, and is excreted principally by the kidneys. It has a marked sedative and tonic effect upon the inflamed mucosa of the congested bladder, so relieving the more urgent symptoms present. He has had a few patients, unable for financial or other reasons to have any operative work done, to whom he has given arbutin palliatively, together with prostatic massage and high-frequency treatments at rather long intervals. Relief from urgent urinary symptoms has followed and also a marked decrease in the size of the enlarged prostate. While this has followed only after a long period of using the drug, it has none the less been positive and gratifying to the patient. He thinks further use should be made of the drug. In the December number of the same journal, Wm. F. Waugh also testifies to the value of arbutin, stating that while a slowly-acting remedy, it is the most potent in our possession for combating vesical catarrh. Even in those of old standing, the result of gonorrhea, the powers of this valuable glucoside are far greater than most practitioners surmise. The difficulty with them (not with it) is that they fail to appreciate the length of time needed for the drug to develop its curative effects. Arbutin is a remedy to be administered for a period of months running into years. It slowly influences the diseased tissues toward health, traveling back the road which they passed from normal to disease. How can anyone expect a cystitis that has endured for years to be cured within a few weeks? Arbutin should be given in increasing doses in these old, inveterate conditions, even up to 15 grains, thrice daily, of the pure glucoside. Ordinarily from 1 to 7 grains a day suffice.



## NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies."

**Bismuth Tribromphenate.**—Basic bismuth tribromphenate. It is claimed to be a non-irritant and non-toxic antiseptic and an odorless and efficient substitute for iodoform. It is said to be of value in gastro-intestinal catarrh, proctitis, dysentery, diarrheas, etc., Merck & Co., New York. (*Jour. A. M. A.*, Nov. 13, 1915, p. 1731).

**Butyl-Chloral Hydrate,** Merck.—A non-proprietary brand of butylchloral hydrate admitted to New and Nonofficial Remedies. Merck & Co., New York. (*Jour. A. M. A.*, Nov. 13, 1915, p. 1731).

**Ethyl Bromide,** Merck.—A non-proprietary brand of ethyl bromide admitted to New and Nonofficial Remedies. Merck & Co., New York.

**Homatropine Hydrochloride,** Merck.—A non-proprietary brand of homatropine hydrochloride admitted to New and Nonofficial Remedies. Merck & Co., New York.

**Sodium Cacodylate,** Merck.—A non-proprietary brand of sodium cacodylate admitted to New and Nonofficial Remedies, Merck & Co., New York.

**Iodothyrene Tablets,** 3 grains.—Each tablet contains iodothyrene 3 grains. The Bayer Company, Inc., New York.

**Thyresol Pearls,** 5 grains.—Each pearl contains thyresol 5 grains. The Bayer Company, Inc., New York.

**Theocin-Sodium Acetate Tablets,** 1½ grains.—Each tablet contains theocin-sodium acetate 0.1 Gm. The Bayer Company, Inc., New York.

**Ampuls Emetine Hydrochloride,** Mulford. 1/12 grain.—Each ampule contains emetine hydrochloride 0.005 Gm. H. K. Mulford Co., Philadelphia.

**Ampuls Emetine Hydrochloride,** Mulford ⅓ grain.—Each ampule contains emetine hydrochloride 0.02 Gm. H. K. Mulford Co., Philadelphia.

**Ampuls Emetine Hydrochloride,** Mulford, ⅔ grain.—Each ampule contains emetine hydrochloride 0.04 Gm. H. K. Mulford Co., Philadelphia.

**Ampuls Sodium Cacodylate,** Mulford, 1½ grains.—Each ampule contains sodium cacodylate 0.1 Gm. H. K. Mulford Co., Philadelphia.

**Ampuls Sodium Cacodylate,** Mulford, 3 grains.—Each ampule contains sodium cacodylate 0.2 Gm. H. K. Mulford Co., Philadelphia.

**Ampuls Quinine and Urea Hydrochloride,** 1%, Mulford.—Each ampule contains 5 Cc. of a sterile 1 per cent. solution of quinine and urea hydrochloride. H. K. Mulford Co., Philadelphia.

**Ampuls Mercury Succinimide,** Mulford, 1/6 grain.—Each ampule contains mercury succinimide 0.01 Gm. H. K. Mulford Co., Philadelphia.

**Calcium Peroxide,** P. W. R.—A non-proprietary preparation of calcium pexoxide admitted to New and Nonofficial Remedies. Powers-Weightman-Rosengarten Co., Philadelphia.

**Magnesium Peroxide,** P. W. R.—A non-proprietary preparation of magnesium peroxide admitted to New and Nonofficial Remedies. Powers-Weightman-Rosengarten Co., Philadelphia.

**Sodium Peroxide,** P. W. R.—A non-proprietary preparation of sodium peroxide admitted to New and Nonofficial Remedies. Powers-Weightman-Rosengarten Co., Philadelphia.

**Strontium Peroxide,** P. W. R.—A non-proprietary preparation of strontium peroxide admitted to New and Nonofficial Remedies. Powers-Weightman-Rosengarten Co., Philadelphia.

Zinc Peroxide, P. W. R.—A non-proprietary preparation of zinc peroxide admitted to New and Nonofficial Remedies. Powers-Weightman-Rosengarten Co., Philadelphia.

Sodium Perborate, P. W. R.—A non-proprietary preparation of sodium perborate admitted to New and Nonofficial Remedies. Powers-Weightman-Rosengarten Co., Philadelphia.

Formic Acid, Merck.—A non-proprietary preparation of formic acid admitted to New and Nonofficial Remedies. Merck & Co., New York.

Agar-Agar Powder, Merck.—A non-proprietary preparation of agar-agar admitted to New and Nonofficial Remedies. Merck & Co., New York.

Agar-Agar Shreds, Merck.—A non-proprietary preparation of agar-agar admitted to New and Nonofficial Remedies. Merck & Co., New York.

Berberine Hydrochloride, Merck.—A non-proprietary preparation of Berberine hydrochloride admitted to New and Nonofficial Remedies. Merck & Co., New York.

Fluorescein, Merck.—A non-proprietary preparation of fluorescein admitted to New and Nonofficial Remedies. Merck & Co., New York.

Mercury Cyanide, Merck.—A non-proprietary preparation of mercury cyanide admitted to New and Nonofficial Remedies. Merck & Co., New York.

Mercury and Potassium Iodide, Merck.—A non-proprietary preparation of potassium mercuric-iodide admitted to New and Nonofficial Remedies. Merck & Co., New York.

Swan's Typhoid Bacterin (No. 44) (Prophylactic).—Marketed in packages of three 1 Cc. vials and also in packages of six 1 Cc. vials. Swan-Myers Company, Indianapolis, Ind. (*Jour. A. M. A.*, Nov. 27, 1915, p. 1915).

---

During November the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Nonofficial Remedies:

Antiseptic Supply Co.:

Iodoapplicators.

Iodoapplicators, Special.

Iodosticks.

The Bayer Company, Inc.:

Iodothyrene Tablets, 3 grs.

Theocin-Sodium-Acetate Tablets, 1½ grs.

Thyresol Pearls, 5 grs.

Merck & Co.:

Agar Agar Powder, Merck.

Agar Agar Shreds, Merck.

Berberine Hydrochloride, Merck.

Calcium Peroxide, Merck.

Ethyl Salicylate, Merck.

Fluorescein, Merck.

Formic Acid, Merck.

Mercury Cyanide, Merck.

Mercury and Potassium Iodide, Merck.

Mercury Succinimide, Merck.

Morphine Meconate, Merck.

Osmic Acid, Merck.

Sodium Oleate, Merck.

Sodium Peroxide, Merck.

Thiosinamine, Merck.

Urea, Merck.

Zinc Peroxide, Merck.



**H. K. Mulford Co.:**

Ampuls Emetine Hydrochloride 0.005 Gm.  
Ampuls Emetine Hydrochloride 0.02 Gm.  
Ampuls Emetine Hydrochloride 0.04 Gm.  
Ampuls Mercury Succinimide 0.1 Gm.  
Ampuls Pituitary Extract  $\frac{1}{2}$  Cc.  
Ampuls Quinine Dihydrochloride 0.24 Gm.  
Ampuls Quinine Dihydrochloride 0.5 Gm.  
Ampuls Quinine and Urea Hydrochloride 1%.  
Ampuls Sodium Cacodylate 0.1 Gm.  
Ampuls Sodium Cacodylate 0.2 Gm.  
Ampuls Sodium Cacodylate 0.5 Gm.  
Ampuls Sodium Cacodylate 1 Gm.  
Purified Tricresol, Mulford.  
Scarlatinal Strepto-Serobacterin (Therapeutic).

**Powers-Weightman-Rosengarten Co.:**

Calcium Peroxide, P. W. R.  
Magnesium Peroxide, P. W. R.  
Sodium Perborate, P. W. R.  
Sodium Peroxide, P. W. R.  
Strontium Peroxide, P. W. R.  
Zinc Peroxide, P. W. R.

**Swans-Myers Co.:**

Swan's Staphylococcus Bacterin (No. 37).  
Swan's Streptococcus Bacterin (No. 43).  
Swan's Typhoid Bacterin (No. 44) (Prophylactic).

**Health Department Fair in Its Prosecutions.**—In response to numerous complaints, the New York Department of Health for a number of years has sought, unsuccessfully, to stop the discharge of offensive odors by the Kalbfleisch Chemical plant, located in the Williamsburgh section of Brooklyn. Last Spring, very severe complaint was made by numerous near-by residents and especially by the authorities of an orphanage in the vicinity. In the latter, it was found that the severity of certain cases of whooping cough which had developed in the institution was much increased by the irritating vapors given off by the factory.

This fall, prosecution was begun in the Court of Special Sessions and has just resulted in the conviction of the defendant and the imposition of a fine of \$500.

In summing up, counsel for the defendant charged that the Department of Health was driving legitimate business out of the city, a statement which was at once challenged by Presiding Justice McInerney. "In my experience," said the Justice, "the Department of Health is the fairest of all prosecuting city departments. I have known many cases similar to the one under consideration but where the nuisance was abated before trial. Invariably, in these instances, provided there was a good reason, the Department of Health has asked to have the case withdrawn."

## The Academy of Medicine of Cleveland

### ACADEMY MEETING

The one hundred and twenty-fourth regular meeting of the Academy of Medicine was held Friday, November 19, 1915, at the Cleveland Medical Library, the President, Doctor C. F. Hoover, in the chair.

The minutes of the last meeting were read and approved.

The minutes of the Council meeting of November 10 were read and approved.

Doctor Moorehouse reported as follows for the nominating committee:

*For President*—W. E. Bruner, R. E. Skeel, R. K. Updegraff.

*For Secretary-Treasurer*—J. E. Tuckerman.

*For Trustees*—E. P. Monaghan, S. L. Bernstein, W. O. Osborn, W. H. Weir.

The Chair asked for nominations from the floor. There being none, the Chair entertained a motion to close nominations. Carried.

### Program

#### 1. The Duodenal Ulcer in Infancy—an Infectious Disease, by H. F. Helmholtz and L. Gerdine, Chicago, Ill.

Three cases were cited especially by the speaker, the one occurring in a child, one and one half years old, and the other two in younger children. All were in association with tuberculosis.

The one case was that of a child, aged 3 months, male, taken suddenly ill with cough and fever, marked diarrhea, with much mucus in the stools and later old blood. Finally fresh blood appeared in the stools. After an illness of 3 days the patient died.

At autopsy, the intestines were found to be distended and of a peculiar bluish tinge, a finding which is common in such cases. An ulcer, one half cm. in diameter was found near the papilla of Vater. Sections through this area showed scattered diplococci at the base of the ulcer with none in the subjacent subcutaneous tissue.

The findings in the other cases were essentially the same. From one of the ulcers, a streptococcus viridens was cultured, which, when injected into rabbits produced gastric and duodenal ulcers. Many of the cases, when autopsied presented the picture of an acute inflammation and infection.

Rosenow in his researches, showed that from ulcers a streptococcus viridens could be cultured, which in the living organism showed an especial predilection for the gastric and duodenal mucosa, causing first hemorrhage and then ulcers.

H. J. Gerstenberger, in opening the discussion, called attention to the fact that ulcer, in children, is an infectious disease. Rosenow pointed out that the various tissues of the body have a varying power of absorption for different organisms. He reported two cases, with symptoms similar to those cited by the speaker.

J. J. Thomas raised the question whether or not the condition could be diagnosed by means of the X-Ray?

C. F. Hoover asked the speaker whether he had any data on the relative frequency of gastric and duodenal scars in cases of healed ulcer?

H. F. Helmholtz, in rebuttal, said that he had no data on the relative frequency of scars in the stomach and duodenum. Of the active processes, he personally had seen only duodenal ulcers, no gastric. As to the use of the X-Ray, it has not been used, because in most of the cases the condition is not suspected.

#### 2. The Blood and Blood Vessels in Hemophilia and other Hemorrhagic Diseases, by Alfred F. Hess, New York City.

The broad term, hemophilia, embraces a number of forms. True hemophilia, its etiology and the factors involved in its production are



not well understood. However, of one point there is reasonable certainty, namely, that the main defect lies not in the vessel walls, but is due to changes in the blood itself.

Following hemorrhage, the coagulation time in individuals suffering with hemophilia is almost normal. The number of platelets in an individual suffering from the disease is very high, in contradistinction to purpura, where the number is relatively low. In the true hemophilia there is no hemorrhage following puncture through the skin into a vein. Further, when to the arm of a true hemophiliac a tourniquet is applied, there is no concomitant or subsequent formation of petechiae in the skin, whereas in purpura the condition is reversed.

To be sure, hemophilia is sex linked, but there is also a definite hereditary purpura. Hemophilia occurs solely in the male but is transmitted by the female. In doing the coagulation on any type of hemophiliac, the test is worthless unless the blood is secured free from any admixture with the tissue juices, as the latter have a definite effect in aiding blood coagulation. The speaker has seen hemophilia in males and purpura in females of the same family.

As to the etiology of purpura, the condition must be due to some change in the vessel walls, probably congenital, for when a tourniquet is applied with sufficient force to the arm, petechiae form in the skin.

As to the cause of hemophilia, the condition is not due to lack of calcium in the blood, since this substance is found in normal amounts. In one interesting case reported by the speaker, however, there was a definite lack of calcium and the patient's condition improved when this was supplied. Relative to the formation of petechiae which results when a tourniquet is applied to the arm of a purpuric individual, it is interesting to note that the same condition results when the test is used in cases of scarlet fever and others of the exanthemata.

Cooley, asked, in opening the discussion, where cases of bleeding in the new born should come, in the classification of hemophilia. He urged the more frequent use of transfusion in such cases.

H. J. Gerstenberger, asked whether thrombo plastin, as used by the speaker in controlling hemorrhage, gave equally good results in hemophilia and purpura, and if so, how this fact could be explained considering the different etiology and findings in the two conditions.

J. E. Tuckerman, asked as to the value of glucose and calcium, in controlling hemorrhage?

A. F. Hess, in rebuttal, said that transfusion was an excellent means of combating hemorrhage in the new born, but even there it was not always efficacious. Glucose had never been tried by the speaker, and the efficacy of calcium is certainly small. In true hemophilia, thrombo plastin works very well, its use being more limited in purpura. Melena neonatorum may be due to a duodenal ulcer. There may be toxic causes for this condition, but the cause varies with the case.

A vote of thanks was extended to the speakers of the evening.  
Attendance, 79.

---

## CLINICAL AND PATHOLOGICAL SECTION

The one hundred and eleventh regular meeting of this section was held in conjunction with the Lakeside Medical Society, at Lakeside Hospital, Friday, November 5, 1915, the Chairman, Howard T. Karsner, in the chair.

The regular program follows:

### 1—Demonstrations of Suspension Laryngoscopy by Wm. B. Chamberlain.

The many advantages of the above named method were shown in practical demonstration by the speaker. For many years the child's larynx was a terra incognita, but due to successively improved meth-

ods, instruments and technic, it has become explored until at the present, due to a large extent to the instrument demonstrated, it can be operated on conveniently and safely.

**2—A Case of Complete Occlusion of the Common Duct, without Stones Treatment, by L. P. Bell.**

The patient, a middle aged woman, entered the hospital complaining of abdominal pain and excessive belching of gas. During a period of eight weeks she had had numerous sharp attacks of pain under the right costal border. She also suffered from nausea and vomiting and was jaundiced. The patient was operated and a large gall bladder was found, containing thick viscid bile and a large number of stones. The latter were removed. About a month after operation the case was turned over to the medical service due to the fact that the patient was becoming extremely emaciated. The stools were alcoholic.

Duodenal tubes were inserted and the patient was given a quantity of milk and three ounces of bile daily. Her condition steadily improved. The patient was then operated again, a cholecystenterostomy being done. The common duct was found to be occluded by adhesions. A drainage tube was inserted and the patient drains from 16 to 20 ounces of bile daily. Her condition is steadily improving.

**3—Presentation of a Case of Gunshot Wound of the Stomach, by Floyd McCray.**

The patient, a boy aged 18, came into the hospital with a gunshot wound through the abdomen made by a 38 calibre revolver. He showed the usual collapse symptoms. Was operated and a small perforation found through the anterior and posterior walls of the fundus of the stomach. After operation he was given tetanus anti-toxin and water and food were withheld for 18 hours. Has made an uninterrupted recovery.

**4—Silk Suture, from a Gastro-Enterostomy Specimen, by L. B. Sherry.**

The case was that of a man aged 54, who entered the hospital complaining of pain in the epigastrium of two years duration. He had steadily lost weight but had no nausea or vomiting. Was operated April, 1915, for ulcer. An ulcer of the pylorus was found, a gastro-enterostomy was performed and an old umbilical hernia repaired. The patient still lost weight, and had a feeling of soreness in the epigastric region after meals. A mass, tender to palpation was found in the region of the pylorus. An X-Ray picture showed that the major portion of a bismuth meal passed through the gastro-enterostomy opening, but extending from the opening were two pieces of silk suture. These were removed, an appendectomy was done and the patient has made a good recovery. George W. Crile, in discussion, referred to the fact that similar cases had been reported at the Mayo clinic, where silk sutures were found to remain intact a long time after operation. Due to this fact the use of silk has been abandoned and chromic catgut is now used instead.

Relative to penetrating wounds of the abdomen, Professor Tuffier, a French surgeon, advocating prompt operation for penetrating wounds of the abdomen, operated five cases and all of them died. He came to regard such cases as hopeless. At an English hospital in Belgium, during the present war, such cases were operated promptly and then given huge doses of morphine and many recoveries were reported.

**5—Perineorrhaphy, by W. H. Weir.**

The frequency of the operation of perineorrhaphy in gynecological operations at Lakeside, can be deducted from the fact that of the last 100 operative cases, 44 were given such treatment. The condition is one which is often overlooked. The patient, for example, may hold herself so rigid during examination that the existence of such condition is overlooked. It may, however, be the source of a variety of symptoms.



It is immaterial how the operation is performed. The essentials to be borne in mind are that the condition constitutes a hernia of the inferior abdominal wall and must be treated as such. The secret of proper treatment rests with the levator ani muscles. Normally, to be sure, they do not lie in contact, but to correct the pathological condition which has developed, these muscles must be coapted. The more marked the prolapse, the higher up must the muscles be united. The fact that the vaginal orifice becomes very small is no drawback, because it can be later enlarged at will. Through and through sutures should never be employed, but the muscle should be sutured separately with chromic cat-gut.

With regard to cystocoele, it is analogous to the sac of a ventral hernia. The condition should be corrected. Here, to be sure, one has no strong tissues to rely on for repair, but in conjunction with an operation for rectocoele it works well. The after treatment in such operations includes the routine use of opium and belladonna suppositories, which obviate, to a large extent, post operative pain.

W. H. Humiston, in opening the discussion, agreed with the speaker as to the value of the operation, but insisted that concomitantly existing conditions, such as prolapse of the uterus, etc., must be corrected, or the patient will gain no relief.

#### **6—Case of Ascites in a Child with Occlusion of the Common Bile Duct and the Portal Vein by H. D. Piercy.**

The patient, John M., aged 6 years, entered the hospital five months ago complaining of a greatly distended abdomen of a few days duration. There was no history of previous illness and the family history was negative. On physical examination, the abdomen was found to be greatly distended, with movable dullness in the flanks. There was marked edema of the scrotum and penis and moderate edema of the legs. There was a large liver and spleen. The stool was alcoholic, there was no jaundice, and the urine contained no biliary elements.

Paracentesis was done and approximately nine hundred c.c. of clear, straw colored fluid obtained, with great difficulty. The characteristics of the fluid were those of an exudate.

The case thus presented the interesting clinical picture of complete obstruction of the common duct and the portal vein, and fits into the series of cases described by which such a diagnosis was proven by subsequent autopsy.

After a months stay in the hospital, the feces were found to contain a normal amount of bile. The ascites disappeared, without any diminution, however, in the size of the liver and spleen. The patient was discharged, cured of his most urgent condition.

Six weeks ago the patient again returned to the hospital, showing, as before, a greatly distended abdomen, with a large liver and spleen, and with moderate ascites. There was no evidence of obstruction of the common duct or portal vein, however, and the stool contained the normal amount of bile. Upon paracentesis, 900 c.c. of opalescent fluid was obtained. There have since been no recurrence of the ascites. Under mercury the liver has decreased in size and the consistency has increased. Whether the process was lumatic or tubercular has not been established.

### **EXPERIMENTAL MEDICINE SECTION**

The eighty-third meeting of this section was held Friday, November 12, 1915, at 8:00 P. M., at the Cleveland Medical Library. The program follows:

#### **1. A Method of Studying Quantitatively Certain Photic Reactions, by Bradley M. Patten, Ph. D.**

The experiments described in this paper were devised for the purpose of making exact quantitative measurements of photic reactions of

the tropism type. Because of its easy availability and hardihood under experimental handling, as well as its high degree of photosensitivity, the larva of the common blowfly was chosen for the work.

An apparatus was constructed by means of which light could be applied as two opposed beams, the intensity of which could be easily controlled and precisely measured. Responses to the stimulation produced by beams of light of different intensities acting simultaneously on opposite sides of the animal, were measured in angular deflections from the initial path of locomotion.

To secure data quantitatively reliable for comparative study, a preliminary "standardizing test" was established, and only individuals showing a uniform degree of sensitiveness were used in obtaining the reactions measured.

Tabulation and graphic plotting of the measurements of some five thousand trials brought out the following conclusions:

(1) When the opposed lights were of equal intensity, the average trail was within 0.09 of a perpendicular erected at the midpoint of a line connecting the sources of light.

(2) When the opposing lights were unequal, the average trail showed a deflection toward the weaker light. For a given intensity difference the amount of deflection was, within the limits of experimental error, definite and constant.

(3) Using the average deflections obtained under each one of the graded series of intensity differences, a curve of the response to differential dilateral stimulation may be constructed. The amplitude of the deflection increases regularly with the increase of intensity difference.

(4) The curve of response to white light may be applied as a means of measurement to data obtained under similar experimental conditions with colored lights.

(Doctor Patten's paper upon this subject appeared in the *Journal of Experimental Zoology*, Vol. 17, pp 213-280.)

## **2. Coagulation Test for Syphilis Devised by Hirschfeld and Klinger, by H. N. Cole and S. E. Chiu.**

Doctor Cole said that in 1914 Hirschfeld and Klinger reported to the Congress of Internal Medicine at Wiesbaden that they had succeeded, by means of the process of coagulation, in distinguishing a luetic from a non-luetic serum. To date these men have made about 1,000 successful tests. During the past nine months the speaker and Doctor Chiu have been working with the technique and have now done some 600 tests.

The reaction is based upon the fact that the cytozyme, an important factor in the production of clot, which is very actively present in the tissue extracts used in the Wassermann reaction, loses its property when it is brought into contact with luetic sera, while it remains intact after similar treatment with a normal serum. In short, one measures the activity of a certain quantity of an extract after mixing it with a serum to be examined. If coagulation is not retarded sensibly and the extract is active in its coagulating power, the serum is normal. If, on the other hand, the coagulation is feeble or completely inhibited, the serum is luetic.

Hirschfeld and Klinger have found this test superior to the Wassermann in many instances, especially in cases of treated lues, and their results show that it is quite as characteristic as the latter.

Doctors Cole and Chiu have done 548 tests upon a great variety of cases, including many infectious diseases and other medical and skin cases as well as upon practically every manifestation of syphilis. Fifty-one specimens of spinal fluid were among this number. Of all the cases, 58, or 10.5 per cent, gave positive results with the coagulation test and negative results with the Wassermann.



Of these 58 cases there are:

Latent Lues .....	19
Treated Lues .....	15
Secondary Lues (Spinal fluid).....	2
Tertiary Lues .....	11
Primary Lues .....	4
Cerebro-spinal Lues .....	3
General Paresis .....	2
Tabes Dorsalis .....	1
Hodgkin's Disease .....	1
Total .....	58

In this series it detected 10.5 per cent more cases than the Wassermann. It was especially valuable in treated lues and syphilis of the central nervous system.

It is to be pointed out that in a small number of cases the results of the reaction could not be explained from the history or the clinical picture of the case, and it is possible that in such cases this test is as fallible as is the Wassermann.

In closing his paper, Doctor Cole drew the following conclusions:

1. The coagulation test carried out by thoroughly reliable and conscientious workers is quite as specific as and more delicate than the Wassermann, in cases of treated, latent and cerebro-spinal lues.

2. Luetic cases, after prolonged and effective treatment, give negative results with the coagulation test as well as with the Wassermann.

3. A few primary cases have given positive results with the coagulation test, while the Wassermann reaction has been negative.

4. Spinal fluids, after inactivation for half an hour at 58° C., give good results with the coagulation test when used in dose of 0.4 cc.

3. **Demonstration of Polygraph and Electrocardiograph Tracings, by E. P. Carter.**

E. P. Carter gave a very interesting and instructive lantern demonstration of tracings of the heart action in many of its pathological states, calling attention to the great value of both the polygraph and the electrocardiograph in making a correct diagnosis in many of the otherwise obscure conditions of the organ.

## THE OPHTHALMOLOGICAL AND OTO-LARYNGOLOGICAL SECTION

The eighty-first regular meeting was held November 26, 1915, at 8:20 P. M. In the absence of Doctor Cogan, Doctor Bruner took the chair.

The minutes of the last meeting were read and approved.

Doctor W. C. Tuckerman and Doctor H. H. Brelsford were appointed as nominating committee for officers for the ensuing year.

### Presentation of Cases

Doctor W. H. Perry presented a man whose vision had been down to perception of light in the left eye since he came under his care, four months ago. The man has been on specific treatment and local use of dionin. The right eye is normal. Doctor Perry's diagnosis was an acute glaucoma. In discussion, Doctor Lauder stated his opinion that it was a marked case of uveitis and that the glaucoma was entirely secondary. Doctor Bruner concurred in this opinion and said that he would not hesitate to use atropin vigorously to see if the posterior synechia could not be torn loose, re-establishing the communication between the anterior and posterior chambers. Doctor W. C. Tuckerman also considered the case one of secondary glaucoma.

Doctor Perry also presented a child of eight years with double subluxation of the lenses upward and outward. With undilated pupils the line of vision passes through the lenses. The doctor was unable to improve vision by the use of either plus or minus lenses. Distant vision is less than 20/200. When placing ordinary print about four inches from the face, can read it and has kept up with his classes. The doctor asked if any of the members thought operation would be advisable.

Doctor Bruner said that he had in two cases done the decision of the lens capsule, using one needle behind the lens to fix it while the capsule was torn by the other. He said they required repeated decisions before the cortex of the lens was completely absorbed and the results were not brilliant. He stated that several operators in the East had advised extraction of the lens by passing a loop behind the lens and removing it in the capsule through a cataract incision. They have reported fair results, but he had not tried it. As the child is able to get along in school, he would be reluctant to advise operation at this time. None of the other members had had experience with operative work in this class of cases.

Doctor Bruner showed two young men who had had steel in the left eye. In one the point of entrance was upward and inward in the sclera and caught the edge of the lens going through. In the other the entrance was in the sclera to the inner side of the cornea, missing the lens and ciliary body. Both were removed by scleral puncture and insertion of the point of small magnet. The vision of the first one is about 6/6 and has remained so. The vision of the other soon after the operation was 6/5 plus, but to a recent test is 6/9 minus. This gradual loss of vision in an eye subsequent to an apparently brilliant operative success raises the question in the settlement of damages whether we should consider the immediate results of a successfully removed foreign body as basis for damages.

In discussion, Doctor Webb P. Chamberlain stated that the State Industrial Commission in its settlement of eye injuries, first made a preliminary settlement on present status of the vision; if later the eye showed further degenerative changes, it considered the claimant eligible for further disability claims.

Doctor Lauder stated that in two cases of primary successful removals of foreign bodies with good vision, he was compelled to enucleate the eyes two or three years subsequent to the injury. One of the patients received a light blow on the previously injured eye while boxing, which set up a severe inflammation, requiring removal. The second patient came in with a severely inflamed eye, with no history obtainable of having received any further injury to the eye. In this case also enucleation was necessary.

Doctor Bruner stated that of late years for removing foreign bodies he was inclined to disregard the use of the large Haab magnet to bring the steel out of the posterior chamber of the lens, and was depending upon the small magnet through a scleral incision.

### Program

#### 1. Atrophy of the Optic Nerve Following Stab Wound (with knife) in Frontal Lobe in Brain, by Edward Lauder.

Doctor Lauder stated that he was very disappointed in not having his patient to present. He had sent him transportation expenses to come to the meeting, but evidently he was out the transportation charges.

The patient had been attacked in the evening by two men, one of whom held him down while the other struck him with a jack knife in the forehead on the right side, making a vertical incision a short distance from the median line. The patient was taken to the German Hospital and the knife blade was so firmly imbedded in the bone that it was removed with great difficulty. Pliers operating over a fulcrum had to be resorted to. The patient the same day complained of total blindness of the right eye. He made a rapid recovery, leaving the hospital in a week,



and showed no further trouble except the permanent blindness of the right eye. At the time of the injury the fundus of this eye showed no changes, but at present is showing optic atrophy. Doctor Lauder's explanation is that the knife blade passing through the frontal lobe somewhat downward must have completely severed the optic nerve in front of the chiasm.

Doctor W. C. Tuckerman suggested a possible fracture of the optic foramin, producing pressure of the nerve, might also be given in explanation.

## **2. Case of Sympathetic Ophthalmia Treated with Salvarsan, by J. E. Cogan.**

Doctor Cogan's paper was postponed, as he was unable to be present.

## **3. Report of Tonsillectomies Under Local Anesthetic, by W. H. Tuckerman.**

Doctor W. H. Tuckerman's paper reporting tonsillectomies under local anesthetic was discussed by Doctor Steuber, of Lima, Ohio. He said that in local anesthetic work he was favorable to  $\frac{1}{2}$  per cent novocain for the infiltration. He also said that in secondary hemorrhages he felt that he had obtained very definite results with the use of normal horse serum.

Doctor Hill, of Canton, stated with regard to whether pain was suffered, that he had had his own tonsils removed by local anesthetic and felt in the attitude of Mark Twain in his story of how he felt when the Christian Scientist suggested that he felt no pain. He said that the pain was more of a smarting character, and one could assure a patient that it would not be as severe as that suffered in dental work. He was strongly in favor of the use of local anesthetic for people over fifteen years of age. He uses novocain  $\frac{1}{2}$  per cent. He stated that at the Mayo clinic in the last year or two, they are doing a large volume of tonsillectomies under novocain  $\frac{1}{2}$  per cent, and that Doctor Matthews uses the solution *ad libitum*, claiming that the more marked infiltration aids them in dissection of the tonsil.

Doctor Perry said that he was using a mixture of Alyinggri, Adrenolin 1 to 1000 m X, Aqua pura 3 i, for infiltration.

Doctor Chamberlain stated that he also had very definite results by the use of normal horse serum for the control of hemorrhage in operative work.

In conclusion Doctor Tuckerman said that his plea for general use of local anesthesia was furthered by the fact that the general anesthetic is still the most serious factor in fatal accidents, and for that reason should be avoided when possible.

At the close of the program the nominating committee presented the following report:

*For Chairman*—Doctor Wm. B. Chamberlin, Doctor Leo Wolfenstein.

*For Secretary*—Doctor W. H. Tuckerman.

On ballot Doctor Chamberlin was elected Chairman; Doctor W. H. Tuckerman, Secretary.

Members present—Doctors Bruner, Lauder, Brelsford, Chamberlain, Perry, Hartzell, Mussun, Opperman, Ralph Fisher, J. W. Tuckerman, W. C. Tuckerman, W. H. Tuckerman; Doctor Hill, of Canton, and Doctor Steuber, of Lima.

---

## **COUNCIL MEETINGS**

At a meeting of the Council of the Academy of Medicine held Wednesday, November 10, 1915, at the Bismarck the following members were present: the Second Vice-President, Doctor W. H. Weir, in the chair; Doctors Ford, Yarian, Moorehouse, Way, Sawyer, Skeel, Webster, Follansbee, Storey, Perkins, Cogan, Lichty, Hoover and Thomas.

The minutes of the last meeting were read and approved.

On motion the name of the following was ordered published as applicant for active membership:

C. D. Christie, M. D.

On motion Doctor C. T. Manley was transferred from the Portage County Medical Society to active membership in the Academy.

A letter to Doctor C. E. Ford from the State Board of Health on the matter of reporting communicable diseases was read and the Secretary was directed to bring it to the attention of the members of the Academy.

---

**The Necessaries for Efficiency and Health.**—"Has any wiser word been said," writes William H. Matthews in the Survey, "by political economists in their endless discussions as to the economic law which, by some mysterious process determines wages, than that of Alfred Marshall, late professor of political economy at Cambridge University, who, in defining the economic requirements of the lowest grade of labor says:

"The necessaries for the efficiency of an ordinary agricultural or of an unskilled town laborer and his family in this generation, may be said to consist of a well-drained dwelling with several rooms, warm clothing, with some changes of underclothing, pure water, a plentiful supply of cereal food, with a moderate allowance of meat and milk, and a little tea, etc., some education and some recreation, and lastly sufficient freedom for his wife from other work to perform properly her maternal and her household duties. *If in any district unskilled labor is deprived of any of these things its efficiency will suffer in the same way as that of a horse that is not properly tended or a steam engine that has an inadequate supply of coals.*"

For "efficiency" substitute "health," and political economy and preventive medicine are discovered to have common ground for urging fair wages for workingmen. Of the two, preventive medicine will probably be found, in the long run, to exercise the more potent influence on living conditions, as determined by wages and by such voluntary social supplements to wages as free hospitals and sanatoria, school lunches, recreation grounds and summer camps. *Preventive medicine demands normal living conditions for everybody.* There may be practical difficulties in the way of the attainment of such conditions; theoretical opposition to the aim itself cannot be maintained.

---

**An Interstate Commission to Fight Mosquitoes in 1916.**—In order to avoid a repetition of this year's mosquito experience, Commissioner Goldwater proposes the formation of an Interstate Commission to fight mosquitoes in 1916. New York City was not alone in its suffering from mosquitoes during the past summer; the situation was no better in Westchester County or in the neighboring States. The residents of the nearby States have a common interest in this matter with those of New York City. Furthermore, no permanent relief from the nuisance can be expected by New York, unless vigorous preventive measures are simultaneously prosecuted in Connecticut, New Jersey and Westchester County. For these reasons the formation of an Interstate Commission is proposed. It will be organized if Dr. Goldwater's plans are carried out at the end of this year. The U. S. Public Health Service has been invited to join and has been requested to nominate a chairman to direct the work of the Commission.



## BOOK REVIEWS

**Practical Medical Series**, 1915; Vol. VII., Obstetrics. By Joseph B. DeLee, A. M., M. D., Professor of Obstetrics, North Western University Medical School, with the collaboration of Herbert M. Stowe, M. D. The Year Book Publishers, Chicago. Price, \$1.35.

This small volume is a collection of reviews of the current literature on obstetrics for the past year. The volume owes its chief asset to the excellent criticisms and remarks of the editors, which are so conveniently placed at the end of each abstract worthy of mentioning.

The volume is of little or no value to the specialist or to the practitioner who reads regularly the valuable abstracts of current literature in the American Medical Journal, and Surgery, Gynecology and Obstetrics; however, to those who neglect these valuable resumes and wish to get a smattering of the entire subject in one small volume, this book may be of value.

The following points are deemed worthy of mention:

The reviewer agrees with the editor that no material advance has been made in the science of obstetrics during the past year, and except in the teaching of a small minority, conservatism is not particularly apparent.

A reference, p. 109, to an article by Sclapobersky advocating rectal examination during labour is most appropriate. If all accoucheurs understood and practiced this most advantageous, but seldom used method, the incidence of puerperal infection would be remarkably reduced.

There seems to be even a greater diversity of opinion as to the value of Abderhalden's test than has been noted in the past. The test has been so frequently modified that at present it can be followed and carried out only by well trained serologists.

The pendulum is swinging strongly in favor of therapeutic abortion for maternal tuberculosis, particularly for pulmonary and laryngeal types.

Nothing new is cited regarding the etiology of the various toxæmias of pregnancy. The saner minds are continuing to advocate conservative methods of delivery, which is the recognized treatment if improvement is not noted under expectant treatment. The literature is strikingly lacking in reports of chemical investigation of this subject. It would seem to the reviewer that much work will necessarily be done along chemical lines before any particular advance is made in this subject.

Pituitrin is appreciated for its dependable use in the practice of obstetrics and most authors rightfully warn against its use before the head is on the perineum.

Increased experience by honest and competent judges on the advantages and disadvantages of the morphine-scopolamine conduct of labour, has caused them to condemn the method absolutely or to limit its use to a small proportion of selected cases. The use of nitrous oxide and oxygen as an analgesic is rapidly coming to the front, and its use up to the present time has been most satisfactory and highly recommended. This latter method requires further investigation, but the reviewer believes is a method which has come to stay.

A glance at the forceps statistics, p. 164, shows the well recognized mortality coincident with the application of high forceps which absolutely contraindicates such application.

The extreme importance of syphilis in obstetrics is well emphasized in William's admirable paper on "Prenatal Care," p. 206.

W. D. F.

**Text Book of Nervous Diseases.** Charles L. Dana, A. M., M. D., LL. D., Professor of Nervous Diseases in Cornell University Medical School; Consulting Physician to Bellevue Hospital; Neurologist to the Montefiore Home, etc., etc. Eighth Edition, with 262 illustrations. P. 632. William Wood & Co., New York, 1915. Price, \$4.25.

The first edition of Dr. Dana's book was published in 1892 and was among the first texts written for students and practitioners, devoted entirely to nervous and mental diseases. New editions have been produced every three or four years, each one containing the more important advances made in the subject up to the date of publication.

In the preface to the eighth edition it is stated that much space was given to the anatomy of the nervous systems in the first editions because, at the time, there was no adequate anatomical description in the English language. This phase of the subject has been greatly curtailed since it has been abundantly supplied by text-books on anatomy. However, the facts of neurological anatomy which are especially useful for diagnosis and reference have been retained, thoroughly revised, and adequately illustrated by diagrams. The first chapter is devoted to a description of the general anatomy, physiology and chemistry. Especially noteworthy is the account of the autonomic-sympathetic system and sensation with a description of protopathic and epicritic components. At the beginning of each part devoted to some special subject, e. g., the cranial nerves, a concise but, for unusual purposes, complete anatomical description is given. This feature of the book makes it especially useful to the student and general practitioner who would find it very time-consuming to learn the essential facts from a book of anatomy.

In the preface a list of the more common or important diseases is given. Out of 176 conditions described only 66 are included in this list. These more common diseases are more fully described in the text than the rare diseases. This is an admirable feature in a book which is especially written for students as it is impossible or at least foolish for any one, except the neurologist, to retain a knowledge of a disease like hereditary urebellar ataxia which may never be seen.

The subject of psychoanalysis by the Freudian method is briefly described but a very conservative estimate is given as to its value as a therapeutic agent. Dr. Dana's ultimatum is as follows: "This psychic mechanism offers a satisfactory explanation to some. It is a poetical, but not an adequate, practical, or always safe method for the practicing neurologist." The emphasis should probably be placed on the point of "safety," for, except in the hands of those specialists who thoroughly understand the danger, much difficulty may arise as a result of "transference" to the doctor of the "free-floating libido." The established method of treating the various psycho-neurosis by "correcting" the general instability, educating the inferiorly developed, removing irritations, and trying to make a perhaps rather poor human system carry its proper load are advocated. The great diversity in opinion in regard to the whole subject of psychotherapy is clearly shown by comparing the book on nervous diseases of Jelliffe and White with the one under consideration. Psychoanalysis will doubtless have a history similar to so many methods of treatment, which at first are hailed as cure-alls but gradually take their inconspicuous places as remedial agents or are eventually discarded.

The organic diseases of the nervous system are all described in a clear manner with an account of the pathology underlying the various conditions. The chapter on sensory neuroses of the cerebro-spinal nerves is especially noteworthy as it gives a remarkably good description of the neuralgias and paraesthesias which are so common and yet so poorly understood.

T. S. K.



**The Medical Record Visiting List or Physician's Diary for 1916.**

William Wood & Co., Medical Publishers, New York.

This note-book, which is well known to many physicians, has been revised in the 1916 edition in a manner which makes it a much more valuable asset to the practitioner than in former years.

In size it is 3x5½ inches. The cover is of flexible leather with an overlapping flap, attachment for a pencil, and a receptacle for loose sheets of notes, etc.

Table of contents:

1. Calendar.
2. A chart for the estimation of the probable duration of pregnancy.
3. Tables of equivalents of temperature, weights, etc.
4. Maximum adult doses by mouth of practically all medicines in both apothecaries' and decimal measures.
5. Drops of various liquids in a fluid dram.
6. Solutions of subcutaneous injections.
7. Solutions in water for atomization and inhalations.
8. Miscellaneous facts.
9. Treatment of poisoning and in other emergencies.
10. Artificial respiration.
11. Signs of death.
12. Hints on the writing of wills.
13. Visiting list with special memoranda. A record of 60 patients a week can be adequately kept.
14. Consultation practice.
15. Obstetrical engagements.
16. Record of obstetrical practice.
17. Record of vaccination.
18. Register of deaths.
19. Nurses' addresses.
20. Addresses of patients and others.
21. Cash accounts.

The Visitor's list is especially adapted to the needs of the busy general practitioner. T. S. K.

**Principles and Practice of Obstetrics**—By Joseph B. DeLee, A. M., M. D., Professor of Obstetrics Northwestern University Medical School, etc. With 1087 pages and 938 illustrations, 175 of them in color. Second edition, thoroughly revised. W. B. Saunders Co., Philadelphia. Price, cloth \$8.00 net; half Morocco \$9.50 net.

This work of Dr. DeLee is indeed a masterpiece and will remain for many years one of the foremost treatises on the subject. Only in terms of highest praise and with a feeling of sincere appreciation can this great volume be commented upon. It is a pronounced addition to American medical literature and will do much to raise the practice of obstetrics to the elevated position of a specialty where it so necessarily belongs. Throughout, the volume reflects the ripe experience of the author, his appreciation of detail and the correlation and use of all scientific advance in his chosen field.

The volume will find its greatest use as a reference work where it is invaluable. As a students' text-book it is too voluminous, its contents somewhat complex and lengthy for all beginners, and its cost is necessarily greater than other more compact texts. The value of the volume as a reference text would be enhanced by longer bibliographies which could be suffixed to many chapters without the necessity of additional pages. The many original illustrations consisting of half-tone drawings, schematic presentations, micro and macro photographs, are of excellent character. They add distinctly to the clarity of the text and are a great aid to the reader.

Lack of space prohibits lengthy comment on the text, but a few notes may be permitted.

The technical difficulties and uncertainty of Abderhalden's serological diagnosis of pregnancy are mentioned. A negative test speaks strongly against pregnancy, whereas a positive reaction is not so dependable.

The author has discarded chloroform, using ether as the anesthetic of choice in almost all cases. Ether is unquestionably indicated for all toxic and operative cases or for prolonged administration, but the reviewer feels that chloroform still has a definite place in normal, short, second stage labour.

Morphin-scopolamin amnesia is commented on, and the technique given, but the conclusions do not warrant its general introduction, in fact it should be used only by the expert and then only in an occasional selected case.

Nitrous oxide and oxygen as an analgesic is just mentioned. The reviewer predicts that in the third edition Dr. DeLee will have more to say about the method and that it will receive his recommendation.

In this day of radicalism it is indeed gratifying to see so great an authority as Dr. DeLee favor conservatism in the time saving, diagnostic evasive, though still extremely dangerous Caesarean section. Section is resorted to only when it is the conservative means of delivery, and the results as can be imagined are gratifying.

The importance of syphilis in its relation to obstetrics is emphasized and much timely advice is given. This is a chapter particularly instructive to many who practice obstetrics.

In conclusion the reviewer wishes to express his own personal delight and satisfaction with this invaluable volume, and he recommends its frequent consultation by every obstetrical practitioner.

W. D. F.

---

**Physiological Chemistry**—A textbook and manual for students. By Albert P. Mathews, Ph. D., Professor of Physiological Chemistry, The University of Chicago. Illustrated. William Wood & Company, New York, 1915. Price, \$4.25 net.

The author has entered in the field of Biochemical literature a book which deserves and should receive the highest recognition. Coming at a time when all minds, it would seem, are endeavoring to lay bare the numerous secrets of living cells, especially their relations one to another under normal conditions and the changes that this normal balance undergoes when some disturbing mechanism has entered. This science has grown to one of magnitude. Its truths are scattered wide in scientific publications of all languages. So wide, in fact, that a comprehensive knowledge of the subject is far beyond the average man.

There are numerous books on the subject of Physiological Chemistry in the English language. They are either working manuals with very little discussion of the subject, or books dealing with special phases, from an extremely scientific point of view. And for the two above reasons are quite unsatisfactory for the general demand. Mathews is well acquainted with the science about which he has written. He has searched through the literature that is so widely distributed. He has taken the contributions along with his own and compiled a good, clear, and readable book covering the entire subject. He has not overdone the subject, I mean the addition of petty discussions. He has seldom allowed himself to make his writing fanciful by the insertion of too many theoretical considerations, instead he has argued from established facts. There are given a number of reliable methods that will commend the book as a working manual.

This book the reviewer believes will span the gap. As a reference to the Biochemist, it will be of great aid, for it brings the science to date, and the bibliographies at the end of each chapter, will, if followed out, lead the interested one to the store houses of literature



upon which the science is constructed. To the medical man and the student it will be of great service because it gives a clear, concise, and logical review of the subject which before, they were not able to enjoy without considerable effort.

The first chapter on the general properties of living matter is well written and extremely interesting. The chapters on Carbohydrates, Protein and Fats, are discussed in considerable detail. Especially as to the probable structural formulae, and the changes wrought when they are subjected to chemical study. These compounds are difficult to manipulate in a description that is clear, yet brief. Chiefly due to the imperfection of our knowledge and since arbitrary classifications must be used. After reading this author's discussions, one feels quite familiar with the truants.

The latter chapters are given over to a review and the chemical aspects of various physiological questions as animal heat, digestion, normal and diseased metabolism, duct and ductless gland secretions and body excretions. These the reader will find are quite interesting and they will furnish a clear conception of the various biological problems involved.

The entire subject of animal and plant chemistry is one of extreme interest. It offers our greatest hope at the present time for an explanation of certain pathological conditions that have so long remained hidden. It is a study that has gained a prominent place. Gradually as the colloid molecule is made tractable and forced to yield up its secrets to science, we can probably review the entire subject and realize that Biochemistry has contributed the greatest knowledge of Pathology.

Such a book cannot be recommended too warmly. The author has made an excellent contribution to Physiological Literature. He has codified old and new facts in an accessible form, removed the obsolete, and added the choice. It will enhance the study of the science by younger men for it is well written and interesting.

C. D. C.

---

**Orthopedic Surgery.** By Edward H. Bradford, W. D., Consulting Surgeon of the Children's Hospital, Boston, and to the Boston City Hospital, Professor of Orthopedic Surgery Emeritus in Harvard University, and Robert W. Lovett, M. D., Professor of Orthopedic Surgery in Harvard University; Surgeon to the Children's Hospital, Boston; Surgeon-in-Chief to the Massachusetts Hospital School, Canton. Fifth edition. Profusely illustrated. William Wood & Co., New York, 1915. Price \$3.75.

In this edition the well known standard text-book for practitioners is brought up to date. It is written in a very conservative manner, and while it deals with many disputed topics in a didactic fashion and does not go into detail with many interesting subjects, yet for this very reason it is a safe guide for the student and practitioner. It must, however, be remembered that many procedures and operations have gained recognition during the past few years which such a conservative book does not recognize or mention, and the practitioner must be on his guard lest he condemn many a helpful operation because he does not see it.

W. G. S.

---

**Diseases of the Nervous System.** By Smith Ely Jelliffe, M. D., Ph. D., Adjunct Professor of Diseases of the Mind and Nervous System, New York Post-Graduate Medical School and Hospital, and William A. White, M. D., Superintendent of the Government Hospital for the Insane, Washington, D. C., Professor of Nervous and Mental Diseases, Georgetown University and George Washington University, Lecturer on Psychiatry, U. S. Army and U. S. Navy Medical Schools. Cloth, price, \$6.00. Pp. 796, with 331 engravings and 11 plates. Lea & Febiger, Philadelphia and New York, 1915.

The first two chapters are devoted to the methods of neurological and mental examination. The former is very clearly and completely described, especially in regard to the cranial nerves. There are also several illuminating engravings showing the course of the various motor and sensory tracts. The outline of the mental examination is open to criticism. Several important features as mental attitude, delusions and insight are barely mentioned, while various tests which are necessary only in special cases, notably defectives, are unduly elaborated. A brief description of the method of psychianalysis is given following the teachings of the Prendian School.

The remainder of the book is divided into three parts as follows:

Part 1 describes the physico-chemical systems and consists of an enlightening account of the autonomic and sympathetic nervous systems and the internal secretions.

Part 2 treats of the organic lesions of the sensori-motor system. The first chapter describes quite fully the diseases of the cranial nerves with numerous diagrams showing the anatomical connections of the nerve tracts. The various lesions of the peripheral nerves, spinal cord, brain stem, cerebellum, meninges, and brain are dealt with in a concise yet comprehensive manner. The final chapter of Part 2 on syphilis of the nervous system is especially commendable.

Part 3 is devoted to the description of the psychic or symbolic diseases, following almost entirely the theories of Freud, especially in the classification and etiology of the neuroses. As a result a great deal of importance is given to the psychoanalytic treatment of these disorders.

As a whole the book can be heartily recommended both to students and practitioners as a text for the study of nervous and mental diseases.

T. S. K.

---

**Syphilis as a Modern Problem.** By Wm. Allen Pusey, Prof. Dematology, University of Illinois, Chicago. Press American Medical Association, 1915. Price \$1.00.

This little book of 129 pages is a part of the commemoration volume issued by the American Medical Association at its meeting in San Francisco. As Dr. Pusey says in the introduction: "The subject of syphilis has been considered from the standpoint of the problems of the disease as they affect the individual and society. The book is written for the layman as well as the physician. The history of syphilis is carefully followed from its introduction to Europe by Columbus sailors, even down to the present day and makes very interesting reading. The course of the disease is scientifically and yet so plainly described that even the layman will be able to grasp the essentials. The problem of hereditary syphilis is gone into at some length and much statistics furnished to show its terrible ravages and high mortality. The chapter on prognosis is very instructive and here too Dr. Pusey furnishes us some references showing among other things that syphilitic life insurance risks have an excess mortality of 70%. The author believes that thorough early treatment will give a favorable prognosis in practically every case. In regard to syphilis and marriage he believes in being conservative, as thus far we have not had enough years of experience with Salvarsan. However, a patient who has been vigorously treated may be married in from 3 to 5 years after infection; provided he has been free from all symptoms for two years. As to the amount of syphilis he is inclined to believe that it is very slightly on the decrease; due perhaps in part to the better general knowledge of the disease. The last chapter is devoted to Prophylaxis and Dr. Pusey justly criticises our cities, very severely, for their lack of proper hospital facilities and dispensaries for cases in the acute infectious stage. As he well says, the expense would be small and the results enormous. Though he is opposed to a "segregated zone," yet he feels that better care of our cases in the acute stages and education of the public will do more to rid us of the disease. He advises the general use and the diffusion of knowl-



edge of the United States army prophylactic package, likewise the earlier marriage of our youths. The book is not long, nor drawn out; it reads like a novel and should be as much a part of the American family's library as *Swiss Family Robinson* or *Gulliver's Travels*. Certainly it would save many a heartache and many a home thereby.  
H. N. C.

---

**"The Practical Medicine Series,"** comprising ten volumes on "The Year's Progress in Medicine and Surgery," is under the general editorial charge of Charles L. Mix, A. M., M. D., Professor of Physical Diagnosis in the Northwestern University School, and Roger T. Vaughan, Ph. B., M. D. **Volume X, Nervous and Mental Diseases,** is edited by Hugh F. Patrick, M. D., Professor of Neurology in the Chicago Polyclinic, Clinical Professor of Nervous Diseases in the Northwestern University School, and Ex-President of Chicago Neurological Society, and by Peter Basse, M. D., Assistant Professor of Nervous and Medical Diseases in Rush Medical College. Series 1914. The Year Book Publishers, 327 La Salle Street, Chicago, Ill. Price of this volume, \$1.35.

This volume devoted to Nervous and Mental Diseases reviews briefly, and yet satisfactorily, all the advanced work in this field during the past year. Under Syphilitic Diseases of the Nervous System, special attention is given to all the recent diagnostic methods and the various lines of treatment in which a vast amount of work has been done. Diseases of the brain, spinal cord and peripheral nerves are all considered as well as mental diseases, in all of which, most excellent reviews of contributions by our most advanced workers are given with many illustrations and case reports.

This series is published primarily for the general practitioner and the arrangement in serial volumes enables those interested in special subjects to buy only the parts they desire. Vol. X is well arranged and well adapted to the purpose for which it is intended, and evidently should be found most useful to the general practitioner.  
K. S. W.

---

**Starvation Treatment of Diabetes.** By Lewis Webb Hill, M. D. Seventy-two pages. W. M. Leonard, Boston, Mass. Price \$1.00.

The author has given in detail the plan of treatment for diabetics as outlined by Dr. Allen. In addition he has included a few of the ordinary tests to be used in arriving at the proper understanding of the severity of the case at hand.

Miss Eckman, dietitian at the Massachusetts General Hospital, has worked out serial diets, representing grams and c.c. in terms of tablespoons and teaspoons. The diets are planned to supply the needs of the busy practitioner in elevating the patient's food, on successive days following the starvation period.

It is brief, concise, and well written, and doubtless will prove helpful to many.  
C. D. C.

---

**War Surgery.** By Edmond Delorme, Médecin Inspecteur Général De L'Armée; Ancien Président Du Comité Consultatif De Santé, De L'Armée; Membre De L'Académie De Médecine; Membre et Ancien Président De La Société De Chirurgie. Translated by H. de Meric, Surgeon to In-Patients, French Hospital, London. Illustrated. Paul B. Hoeber. New York, 1915. Price, \$1.50 net.

This little handbook is an encyclopedic manual in small volume. The early chapters contain descriptions of various kinds of projectiles and of the characteristic wounds caused by each, the larger portion of the book being devoted to regional surgery. It is surprising to find but the briefest mention of infections, the problem with which military surgeons are chiefly concerned in the present war.

In general, it is a handbook which might be studied to advantage by members of the Medical Reserve Corps and by surgeons who intend to apply for positions in field or base hospitals.  
G. W. C.

**Student's Text-Book of Hygiene.** By W. James Wilson, M. D., D. Sc., D. P. H., Bacteriologist to the Counties of Down and Antrim. Cloth. Price, \$2.50. Pp. 270, with illustrations. New York: Rebman Company, 1915.

The difficulty with a book of this sort is that no matter how valuable it may be for the students for whom it was prepared, yet when transported to another country it loses at once much of this value. The more or less exclusive references to British conditions, and to British statistics gives the local character valuable to the British student but fails to thrill the foreigner. The references to work of American authors, notably in connection with ventilation and the dangers of sewer gas, are conspicuous by their absence. A marked improvement in the sequence of the lectures is shown in the teaching of air, soil, water and food at the beginning as a basis for further work. This system is not, however, carried out later, for we find discussion of school and personal hygiene before communicable diseases, and before disinfection and quarantine. The book is interesting and well expressed, but the selection of the illustrations is open to criticism.

R. G. P.

### ACKNOWLEDGMENTS

**Bacteriology for Nurses.** By Harry W. Carey, A. B., M. D., former Assistant Bacteriologist, Bender Hygienic Laboratory, Albany, N. Y., Associate in Medicine, Samaritan Hospital and City Bacteriologist, Troy, N. Y. F. A. Davis Company, Philadelphia and London, 1915. Price \$1.00 net.

**Hospitals and Law.** By Edwin Valentine Mitchell, LL. B., of the Faculty of the College of Law, University of South Dakota; Author of the "Doctor in Court." Rebman Company, New York, 1915. Price \$1.75.

**The Obstetrical Quiz for Nurses.** A Monograph on Obstetrics for the Graduate and the Undergraduate Nurse in the Lying-in-Room. By Hilda Elizabeth Carlson. Rebman Company, New York, 1915. Price, \$1.50.

**The Medical Clinics of Chicago.** Volume 1, numbers 1, 2, 3. Published Bi-Monthly by W. B. Saunders Company, Philadelphia and London. Price, \$8.00 per year.

**Ohio Hospital Association Organized.**—Heads of fifty private and public hospitals in the State met at Cedar Point for a two-day session on August 25-26. They organized the Ohio Hospital Association for the purposes of aiding legislation, standardizing training schools for nurses, to secure more benefits under the provisions of the Workmen's Compensation Act, to help shape the rules governing nurses' registration, and to devise some statewide system for complying with the provisions of the federal law relating to the administration of narcotics.

The officers elected were: President, E. R. Crew, M. D., Dayton; Vice Presidents, Rev. A. G. Lohmann, Cincinnati, Miss Charlotte Kerans, Toledo, Miss E. J. Lanten, Ashtabula; Secretary-Treasurer, Mr. Howell Wright, Cleveland; Executive Committee, the officers and Dr. W. S. Hoy, Wellston; Dr. A. C. Bachmeyer, Cincinnati; Miss Mabel Morrison, Toledo; Dr. F. C. Huth, Cambridge, and Miss M. C. Echols, Massillon.



# The Cleveland Medical Journal

---

Vol. XIV

DECEMBER 1915

No. 12

---

## THE DIAGNOSIS OF CEREBRO-SPINAL SYPHILIS BY LABORATORY MEANS

By CLYDE L. CUMMER, M. D.

Assistant Professor of Clinical Microscopy, School of Medicine,  
Western Reserve University

An adequate consideration of the diagnosis of cerebro-spinal syphilis would be impossible without summarizing the changes in the conceptions of its pathology. Intensive study has been given to the group of clinical conditions classified under this heading during recent years. Interest was first stimulated by the discovery of the etiological factor. As long as the cause of syphilis was unknown, it was difficult to formulate sound pathological ideas, as is evidenced by the doubt persistently held by many as to the syphilitic nature of tabes and paresis. The demonstration of spirochetæ in the brain of paretics and in the spinal fluid of tabetics has put an end to argument on this score. Diagnosis in cases presenting vague clinical signs was hard when objective evidence was lacking. This deficiency has been supplied by the Wassermann reaction and the cytological and chemical examination of the spinal fluid, and the import of this is seen in the number of cases in the preclinical stage which are daily recognized and treated. To hold this advance and to push the gain to the utmost there was needed only a measure which would enable us to accomplish in a therapeutic way more than had been possible formerly. The need was supplied by Ehrlich's arsenical preparations, the value of which cannot be gainsaid. The net result of these discoveries has been much more than can be expressed by the simple process of addition, for each has aided the other and the outcome has been a far-reaching revision of viewpoint.

First we must think of tabes, paresis and cerebro-spinal syphilis, not as sharply defined clinical entities, but as differing manifestations of one disease, syphilis of the central nervous system. It is recognized that from the very practical standpoints of prognosis and treatment it is unwise merely to label

a given patient with one of these convenient names and consign him to the class of the comparatively hopeless. The prime essential is to determine the exact nature of the morbid process underlying the manifest signs and symptoms. For example, a case of disseminated sclerosis or muscular atrophy cannot be tagged and dismissed until the vital question of possible luetic basis has been settled. The division into set classification really tells us little of the problem which confronts us in a particular case. A patient may have the physical signs of tabes, and these signs may be produced either by an active meningeal inflammation or by a degeneration of the posterior tracts. The prognosis is vitally different.

There is a distinct tendency to group cases of cerebro-spinal syphilis under headings which will express the nature of the pathological process. Head<sup>1</sup> suggests an excellent working classification. He divides cases into two groups:

1. Syphilis meningo-vascularis.
2. Syphilis centralis or parenchymatous syphilis.

The first class includes most of the conditions often spoken of as acute, subacute, chronic, tertiary and gummatous cerebro-spinal syphilis. They are such as depend chiefly upon disease of meninges or vessels. This group has been found to be especially amenable to properly directed treatment.

Syphilis centralis or parenchymatous syphilis includes many of the cases called by Fournier "para-syphilis." We now know these cases to be actively syphilitic at some stage, for not only has the spirochete been demonstrated in paresis and tabes, but therapeutic response to newer specific measures has been obtained. This group takes in paresis, tabes dorsalis, certain instances of muscular atrophies, optic atrophy, gastric crises, or epileptic manifestation. The pathology differs from that of the first class in that tracts and nuclei have degenerated, due, so Head asserts, to the fact that the neuroglia and essential tissues have been rendered hypersensitive by the previous activity of the spirocheta pallida. The outlook is not so hopeful as in the first group because the anatomical location of the lesion, even when active, makes them comparatively inaccessible to such treatment as is ordinarily administered, and in many the disease has run a rapid course in isolated areas and then has become arrested, leaving hopelessly degenerated nerve tissue.



Head, however, emphasizes the impossibility of passing judgment by placing a patient into either of these groups until he has been under treatment and under serologic observation for at least six months. By this time, the degree of response to treatment will aid one to determine whether the lesions are amenable to treatment or not. He supports his contention by a recital of instances where a diagnosis of dementia paralytica would have been made on clinical findings, but where the reaction to treatment proved that trouble had been due to a disseminated cerebro meningo-vascular syphilis.

Ravaut<sup>2</sup> called attention to the *preclinical stage* of cerebro-spinal syphilis. It is apparent that there is a period of time which may last for months or possibly years during which organic changes are taking place though the clinical signs are slight or absent. This he refers to as the "preclinical stage." It is precisely the period when treatment would be of the most avail. The diagnosis cannot be made on purely clinical grounds, but can be established readily and definitely upon examination of spinal fluid. The symptoms which may serve as danger signals have been ably summarized by Head<sup>1</sup> as (1) changed in personality and aptitude, (2) disturbance of sleep, (3) headache, (4) shivering attacks (with or without fever), (5) root lesions, (6) abnormal reactions of the pupils, and (7) disturbances of micturition. A single one of these symptoms demands further investigation. An example is one of our cases, who complained of numb feelings in his hands and stiffness in his legs.

Physical examination showed no more than a disparity in the size of the pupil and a little slowness in the light response. His physician and the consultant were unable to reach a definite conclusion. The diagnosis was made by the examination of the spinal fluid, which was under increased pressure and showed a cell count of 52, an increase in globulin and a positive Wassermann reaction. Clinical response to intravenous salvarsan was prompt.

It is interesting to note the early period at which the central nervous system may be attacked. This Ravaut<sup>2</sup> spoke of in 1903, when he reported that in cases of secondary syphilis, without signs or with practically no signs of nervous involvement, the spinal fluid showed syphilitic changes in 70 per cent. Subsequently, this observation has received repeated confirmation.

It is true that many of the cases become latent, but a sensitization of the nervous tissues has taken place, and undoubtedly in many instances spirochetæ are laid down which only wait a favorable time for attack. All cases of early involvement, however, do not escape with a dormant period of any length, as is evidenced by this case report:

J. M., a sailor, aged 22, was first seen by us October 21, 1912. He presented a primary lesion on the penis, which had appeared 9 days previously. We demonstrated the spirocheta pallida and 5 days later found the blood-serum Wassermann reaction positive. When we saw him next, he stated that on December 24, 1913, *i. e.*, 10 weeks after the first appearance of the primary lesion), he had been "startled by a call" and had lapsed into epileptic-like convulsions. Since then he had suffered with constant headache and had been unable to sleep. The only physical signs were increased knee-jerks. The spinal fluid left no room for doubt as to the activity of the syphilitic meningitis. It showed 73 cells per cu. mm., a heavy trace of globulin, and a positive Wassermann reaction. Immediately after the diagnosis had been made in the primary stage, he had received one injection of salvarsan and 8 doses of mercury salicylate, a grain at weekly intervals. We have here an acute meningo-vascular syphilis developing 10 weeks after the first appearance of the chancre.

A discussion of diagnosis would be incomplete without passing reference to the unreliability of the history in many instances. Denial of syphilitic infection, no matter how earnest, should not be given any consideration. The patient may be perfectly honest in denying a knowledge of a primary lesion. His infection may have been innocent and the primary may have been on the lip or within the mouth, so that its nature was unrecognized. He may have had one or more lesions in the classical location and, when the secondary signs failed to appear, the initial sore may have been dismissed as a "chancroid," or the syphilitic infection may have been masked completely by a concomitant severe gonorrhoea.

The first symptom noted by one case\* was severe pains in the legs. These were dismissed as "rheumatic" by the physician whom he consulted. Finally "one ankle turned over when

---

\*Footnote a. To be described in a succeeding paper by my associate, Doctor Richard Dexter, as Case 10.



he walked," and he spoke of this, asking whether he might not have "locomotor," whereupon he was asked whether he had had syphilis. He gave a negative answer, since he had no knowledge of having had the classical signs, though he freely admitted exposure. Because the history was lacking, he was assured that he could not have tabes. Finally the ataxia became so marked that any passer-by on the street could have told what was the trouble. By that time irreparable damage had been done to nerve tracts and the best one can hope for is to arrest the active process.

We cannot avoid passing comment on the clinical application of the knowledge regarding latency. In the light of what has been shown, it is easily seen that it is unwise to discharge a syphilitic as cured unless the spinal fluid has been found negative. An active cerebro-spinal syphilis may exist, giving no clinical signs, to be sure, and still showing persistently negative Wassermann reactions in the blood-serum. Inspection of the spinal fluid should be the final criterion of cure for every syphilitic.

A study of what has been done forces home two ideas; ideas which loom up as clinical guide-posts. One is that syphilis may produce marked involvement of the central nervous system without producing any striking clinical signs for a long period of time, and that the all-important early diagnosis cannot be made without examination of the spinal fluid. The other is that even with distinct clinical signs it is only the examination of the spinal fluid which can illuminate the exact nature of the morbid process. When this examination is repeated, it is helpful in forming a prognosis and in directing treatment.

#### **Technique of Lumbar Puncture**

The subdural space was one of the last recesses of the body to be entered commonly by the diagnostic needle. The time when this procedure was rare and when few knew its technique is within the memory of recent graduates. Though Quincke's original work was published in 1872, lumbar puncture was not frequently employed in this country until very recent years. This was on two accounts—one was a fear of entering the subdural space, and the other was that, aside from the cases of acute infectious meningitis, little knowledge was to be derived from the fluid after it had been obtained. The school of Raymond, however, aroused interest in the cytological study of the

spinal fluid, and Flexner's description of the antimeningococcic serum directed attention to the therapeutic possibilities of intraspinous medication. From that time lumbar puncture became a necessity for one who aimed to make diagnoses in affections of the central nervous system.

The operation is not at all times easy, the anatomical relations rendering the insertion of a trocar difficult unless they are borne carefully in mind. The position of the patient is of the utmost importance. The technique has been described best by Swift and Ellis.<sup>3</sup> Their directions are so lucid and explicit that we will quote them verbatim. "Lumbar puncture is performed with the patient lying on his right side in bed. The most essential procedure in the technique is the preliminary arrangement of the patient, who should be on the extreme edge of the bed, lying on his right side, and an attempt should be made to have the lower back as nearly straight in both planes as possible. The knees should be drawn up so that the thighs are at right angles to the trunk. Care should be taken to have the patient's shoulders straight, that is, both shoulders should be at right angles to the surface of the bed. This prevents a sagging of the body and consequent delignment of the spine in the lumbar region. In stout women a small pillow placed in the curve between the crest of the ilium and the costal margin is often of service. Attention to details in this stage of the procedure increases greatly the ease of lumbar puncture."

The intervertebral space at the level of the iliac crest is the one usually selected for puncture. I have found the space immediately above this somewhat easier to enter. The skin of the entire lumbar area is carefully sterilized and anaesthesia is produced by infiltrating the skin with 1/400 solution of novocain, which can be sterilized by boiling. This is also injected deep into the tissues with a long needle.

"The lumbar puncture needle is then inserted in midline toward the lower border of the intervertebral space selected. The needle should be kept at right angles to the body in both planes, when, if the patient has been properly placed, it should pass into the canal without touching bone in its course. If the space below the iliac crest is selected, a slight cephalic direction of the needle must be used. The needle should be inserted until its point is felt to just touch the anterior wall of the vertebral canal. It is to be remembered that nearly all unsuccessful



attempts with such a technique are due to a misdirection of the point of the needle downward, that is, to the right of the canal. If, therefore, fluid is not obtained, the needle should be partially withdrawn and its butt strongly depressed; this raises the point of the needle, which then, on reinsertion, frequently reaches its desired destination."

The preferable form of needle is one supplied with an obturator which can be removed after the needle has been inserted. This is essential to prevent occlusion of the lumen by bits of tissue. The butt end of the needle should be ground to fit a metal slip point connection by means of which a rubber connection can be attached if desired for pressure determination or for therapeutic injections. The amount withdrawn should not exceed 8 c.c. We find it convenient to use a graduated centrifuge tube for collecting the fluid, thus making certain of accuracy. Certain cautions should be borne in mind. When making a differential diagnosis, if brain tumor is suspected, much care should be exercised not to decompress too rapidly. In all instances the patient should be kept absolutely flat on back or side in bed for at least 24 hours, and this means that the head should not be raised from the pillow.

#### **Possible After-effect of Lumbar Puncture**

It cannot be claimed that the procedure is one which is always entirely free from distressing after-effects, even in seemingly normal people. In many clinics abroad it is the prevailing custom to perform the puncture with the patient in the sitting posture and to allow him to leave the hospital at once, though Quincke himself warns against this procedure. This practice has never been accepted widely in this country, for it has been felt that the chances of unfortunate sequelae on account of the change in intracranial pressure were too great. Accordingly it is here the generally accepted rule that the patient is to remain flat on his back or side for at least 24 hours. Even with this precaution we occasionally encounter instances where the patient upon arising notices a severe headache which lasts for a period of days. In three recent cases there was a sensation of stiffness and lameness in the muscles of posterior cervical region, which persisted for several days after the headache had gone.

It occurred to us that it might be possible to obviate such unpleasant symptoms after purely diagnostic punctures by replacing the fluid with an equal quantity of freshly prepared

sterile normal saline solution. So far, we have not done this frequently enough to be able to judge of the efficiency, but we have obviated sequelae when it has been tried. Occurrences of the sort described are seldom and are not serious even at their worst, so they should not deter one in the use of this valuable diagnostic method.

### **Pressure of the Spinal Fluid**

During the withdrawal of the fluid observations of the pressure and the rate of flow are possible. The pressure can be determined readily by attaching a section of capillary glass tubing to the free end of the trocar by the rubber connection to which we have referred. When this tubing is held upright, the height to which the fluid rises is measured, taking as 0 the level of the end of the needle. Quinke uses the degree of the pressure to determine the amount of fluid withdrawn, not allowing it to fall below 100 m.m.

### **Characteristics of the Spinal Fluid**

Once the fluid has been obtained it may be studied in the following ways:

1. Gross appearance.
2. Cytology.
3. Chemistry.
4. Immune reactions.

We shall attempt merely to outline the nature of the tests, in order to discuss the significance of the findings.

#### **1. *Gross appearance.***

*a. Color.* Normal spinal fluid is colorless, and in the gross could not be distinguished from distilled water. Its specific gravity is given as 1.006 to 1.007.

#### *b. Turbidity.*

When turbidity is present, it is due to a high cellular or bacterial content. In most cases of cerebro-spinal lues, the fluid is clear, but when an active luetic meningitis exists and the cells are present in large numbers, distinct turbidity is seen.

#### **2. *Cytology.***

A study of the cellular elements is of great assistance. The determination of the actual number of cells in each cubic milli-



meter is made most accurately according to the following method: The hemocytometer pipette commonly used for enumerating red blood cells is employed. The staining fluid\* is drawn to 0.7 mark and is then sucked up into the pipette to coat the walls of the bulb. Next the pipette is filled with freshly-drawn spinal fluid to the mark 101, the mixture is thoroughly shaken, and is set aside for about 15 minutes. The proportion of stain is so small that it is neglected and the fluid is regarded as undiluted. At the end of this time the lymphocytes will have been sufficiently stained with the violet so that they can be readily counted with the aid of a counting chamber. The average of several fields, each 1 m.m. square, is determined and this is multiplied by ten to ascertain the number per c.m.m. In case red blood cells are present the reds and lymphocytes can be counted separately. One may then determine the number of leucocytes which would be expected with the mixture of the ascertained number of red cells and the lymphocyte count may be corrected accordingly.

Freshness of the spinal fluid is of great importance in cytological study. The lymphocytes disintegrate rather rapidly. Sometimes this is observed even during the process of counting. It is apparent that the count will be reduced considerably if it is not made very soon after the withdrawal of the fluid. This is a practical point worthy of note. The normal count varies from 1 to 5.

The following table has been suggested<sup>4</sup> for interpreting the results:

1 to 6 cells per c.m.m.	.....normal
6 to 9 " " "	.....doubtful, border cases
10 to 20 " " "	.....slight lymphocytosis
21 to 50 " " "	.....moderate lymphocytosis
Over 50 " " "	.....marked lymphocytosis

Another method of determining the cellular count is that of Sicard. It is mentioned here that it may be criticised, inasmuch as it has attained some popularity in this locality. The fluid is centrifugalized for a given length of time in a centrifuge revol-

\*The staining fluid is prepared as follows:

Methyl Violet, 5B, 0.1 gm.  
Glacial Acetic Acid, 2.0 c.c.  
Distilled Water, 100.0 c.c.

ing at a specified rate. The supernatant fluid is then withdrawn with a capillary pipette, and the residual drop is placed upon a slide. It is prescribed that the drop shall be only large enough to cover a given area on a slide. This drop is then dried, fixed and stained. The number of cells in a field of given magnification is taken as the index of the number of cells per c.m.m. While the result may serve as an approximation, it is quite apparent that there are too many uncontrollable factors to render it at all accurate as a quantitative method. For example, the speed of few centrifuges can be regulated to a constant rate, the size of the residual drop is difficult to control and it is next to impossible to include all of the cells in the last drop and not waste a fair proportion in removing the supernatant fluid.

While useless for accurate quantitative work, preparations made according to this method serve excellently for a study of the cellular types. When employed, points of importance in the technique are: the slow drying of the sediment in the air with no heat or at only a low heat and fixation with absolute methyl alcohol (allowing this to remain 2 minutes), avoiding the application of the flame. These precautions are necessary to prevent rapid drying of the cells and consequent shrinking with distortion of the cell outline. Wright's stain may be employed. The more frequent types of cells are the small lymphocytic cell and the large endothelial cells.

### 3. *Chemistry.*

*a. Reduction of Fehling's solution.* Normal spinal fluid contains a substance, presumably a sugar, which reduces Fehling's solution. It is absent in meningitis, but may be present in slight inflammatory conditions. Absence of reduction is of uncertain import, and this test has little practical value.

*b. Albumin.* Albumin is found in normal spinal fluid, but only in traces. An increased amount of albumin accompanies practically all inflammatory conditions.

*Noguchi Butyric Acid Test:*<sup>5</sup> 0.2 c.c. of spinal fluid (free from blood) is mixed in a test-tube with 1.0 c.c. of 10 per cent dilution of Butyric Acid in normal saline solution. This is heated to boiling, when 0.2 c.c. of normal sodium hydrate is added. Again the tube is heated to boiling, after which it is allowed to cool. Normally a slight opalescence is obtained. A distinctly granular or flocculent sediment indicates an increase in globulin.



An arbitrary standard for reading the Noguchi reaction has been suggested by Swift and Ellis.<sup>3</sup> This has been followed in our reports.

Negative: opalescent to very faint haze.

Plus-minus: faint haze to haze.

One plus: fine granular precipitate.

Two plus: heavy granular or coarse flocculent precipitate.

Three plus: very heavy flocculent precipitate.

#### *Lange colloidal gold test.*

A solution of colloidal gold is prepared.<sup>6</sup> An equal quantity (5 c.c.) is placed in each of a series of ten test-tubes into which have been put progressively decreasing quantities of spinal fluid, diluted with an electrolytic salt solution. In certain clinical conditions a precipitation of the colloidal gold solution occurs. This is presumed to be due to presence of globulin. The extent of the reaction (when present) varies in the different tubes and is expressed in figures on a scale of 5, the maximum reaction being represented by 5. In such a tube the reddish color of the reagent is entirely bleached to white and a slight yellowish precipitate is seen.

The readings are made according to the extent of color change as follows:

White .....	5
Grey blue .....	4
Blue .....	3
Lilac .....	2
Red Blue .....	1
Red .....	0

By so evaluating the reaction in each tube, a curve can be constructed for a given test. It is asserted that certain curves are typical of various conditions. For example, the series of tubes in a case of paresis would read 5, 5, 5, 5, 4, 3, 1, 0, 0, 0. In other luetic affections of the central nervous system the readings in the tubes would run 0, 1, 3, 3, 1, 0, 0, 0, 0, 0, or at least the curve would be similarly placed, while with suppurative or tuberculous meningitis a typical curve is taken as one moved considerably further to the right, so that an example of the readings in the tubes would be 0, 0, 0, 1, 3, 4, 4, 2, 1, 0.

The test is one which is comparatively simple to perform, but success depends upon strict adherence to painstaking details. The fluid must be entirely free from blood. It is essential that all glassware be absolutely clean, and by this is meant not merely sterility but freedom from chemical impurities and particularly precipitated stain. All water employed has to be doubly distilled and in this process of distillation the distillate must not come in contact with rubber. The preparation of a really satisfactory solution of colloidal gold is rather difficult, and to secure a fluid of proper color may be possible only after many failures.

#### 4. *Immune reactions.*

A dissertation upon the technique of the Wassermann reaction would be quite out of place. We desire to call attention to two points of major importance. The first is, the use of adequate amounts of spinal fluid in performing the test. This is referred to as "Auswertungs Methode" of Hauptman and Hoessli.<sup>7</sup> The maximum dose of spinal fluid should be at least 1.0 c.c. with the unmodified technique. Indeed, we prefer to use even larger quantities than this when the spinal fluid Wassermann is taken as an index of the efficiency of treatment. Since workers began to employ larger quantities of spinal fluid, they have obtained a much larger proportion of positive results in known cases of neurological syphilis, and it behooves the clinician to assure himself that his tests are performed in this manner.

The second point is to mention the fallacy of relying solely upon the blood Wassermann reaction as a diagnostic test for central nervous system syphilis. When blood serum is employed, a positive result may be taken as collateral evidence, but a negative result has absolutely no weight in excluding lues of the central nervous system. Especial emphasis is placed on this fact because many have been inclined to rely too much upon a negative blood test. Cases where the blood has given negative results and the spinal fluid positive are too numerous to recount.

In following treatment, the titration of the strength of the reaction is of much assistance. This may be done quite simply by setting up the test with graduated amounts of fluid and noting the smallest quantity which suffices to give a positive result.

For several reasons the use of cholesterinized antigens, as suggested by MacIntosh and Filder,<sup>8</sup> is recommended. These antigens are extremely sensitive and it is more nearly possible



to secure constant antigens of uniform titre with this technique than with any other method available at present. The desirability of utilizing antigens of uniform strength for the observation of cases under treatment is obvious. The observations reported in the second paper have been made in this manner and the tables have been prepared accordingly.

### Interpretation of Results

We now come to a consideration of the significance of the various tests. It is to be remembered that they are to be appraised separately and are not inter-dependent, though their results supplement each other.

*Cellular Increase:* This is due to an active meningitis and the intensity may be taken as an index to the extent of the process. Very high cell counts are obtained in secondary syphilitic meningitis. In tabes dorsalis the count varies. With an active process, a moderately high or high count would be expected (30 to 200), but in old cases where the active process has receded and secondary degeneration predominates, a low count is the rule. Endarteritis syphilitica may show little increase. In gummatous cerebro-spinal syphilis the count varies, depending upon the meningeal involvement. Paresis shows the same variation, though in our experience fairly high counts, above 75 or 80, have been the rule. A cellular increase is not pathognomonic of syphilis, since a high count is found in any acute meningitis (tuberculous, epidemic and pneumococcic). The cell picture is, of course, quite different in these infections, tuberculous meningitis alone giving a mononuclear increase.

As a prognostic sign, it is apparent that a fairly high count (above 30 or 40) occurring in tabes is encouraging rather than the reverse, since it points to an active meningeal involvement, which is noteworthy in responding well to treatment. The obvious desideratum is the abolition of the meningitis before secondary changes, due to pressure and circulatory disturbance, have taken place. On the other hand, a low count makes one less hopeful, for it indicates that the physical signs are probably due to a degenerative process and that the active stage, where therapy affords some hope, has passed. The point, of course, is not absolute and has to be interpreted in the light of all the clinical findings. As would be expected, the cell count is the first of the

laboratory signs to show response to treatment and counts of 75 to 100 often drop to normal after two or three intrasapinous injections of salvarsanized serum.

#### *Globulin Increase:*

A certain amount of globulin is present in normal fluids, as has been said. An increase is presumed to be due to transudation from the vessels of the central nervous system. It is evident that it may be produced in many clinical conditions, indeed, whenever the circulation is disturbed. Tumor of the chord, bony canal, or meninges, arteriosclerosis, or inflammatory conditions of the central nervous system may cause a globulin increase. Hence, this finding is a general one, and must be evaluated with due consideration of the other tests and the clinical signs. It is present in almost every case of central nervous system syphilis, no matter what the form of involvement may be. Practically the only exception is in occasional cases of long standing tabes. In following treated cases we have found that it is one of the most stubborn of the tests.

#### *Lange Colloidal Gold Test.*

Our experience with the Lange colloidal test has been that it serves as an excellent means of supplementing the other reactions. It cannot be denied that paresis gives a curve distinctly different from that of tabes orluetis meningitis; why it should be so, no one has attempted to say. We are thus provided with our only laboratory means of differentiating between these conditions. Not only that, but the reaction in our hands, as well as with other workers, has given a higher percentage of positive results in a series of known cases of syphilitic central nervous system involvement than has the Wassermann reaction itself. Our experience with the tests in non-syphilitic conditions has not been large enough, however, to judge as to the specificity of the curves ascribed to lues, or to know whether or not the curves in infectious meningitis may not be very similar.

#### *Wassermann Reaction:*

The Wassermann reaction serves a two-fold purpose. It is specific for syphilis and demonstrates that the inflammatory process is undeniably luetic, and it localizes the syphilitic process in the cerebro-spinal axis. The latter is of importance, since a positive blood test is not conclusive evidence that the central nervous system is involved by syphilis, for it only means an



active process somewhere in the body. Bacterial antibodies in the general circulation are not passed into the subarachnoid fluid and, therefore, if present, must have been elaborated by a specific process in the central nervous system. This serves to explain the fact already noted, that a patient may present signs of active spinal syphilis and give a negative Wassermann reaction with the blood serum but a positive reaction in the spinal fluid. It simply means that the infection in the body generally has died out, or the organism has ceased to elaborate antibodies to cope with it, while the process in the central nervous system is distinctly active.

In following treated cases we have found that the Wassermann reaction is slow to disappear, much slower than the cellular increase, but is more rapid than the globulin test.

### Summary

To recapitulate, we will merely paraphrase certain sentences in the body of the paper:

1. Syphilis may produce marked involvement of the central nervous system without producing any striking clinical signs for a long period of time. The all-important early diagnosis cannot be made without examination of the spinal fluid.

2. Even when manifest clinical signs are present, it is only the examination of the spinal fluid which can show the exact nature of the morbid process.

3. With patients who are under treatment, the repeated examination of the spinal fluid serves as a guide in treatment and in prognosis.

615 *Rose Building.*

---

### References

1. Head: *Brain*. MacMillan & Co., 1914, Vol. XXXVIII, part I, page 1.
  2. Ravaut: *Ann. de Derm. et Syph.*, 1903, Nos. 2, 3, 5 and 8.
  3. Swift and Ellis: *Forchheimer's Therapeutics of Internal Diseases*, Vol. V, p. 401, 1914.
  4. Dreyfuss: *Münch. Med. Woch.*, 1912, LIX, 2567.
  5. Noguchi: *Serum Diagnosis of Syphilis*, 3rd ed., 1913.
  6. Lange: *Zeitsch. f. Chemotherap.*, 1912, I, 44.
  7. Hauptmann, A., and Hoessli, H.: *Münch. Med. Woch.*, 1910, LVII, 1581.
  8. MacIntosh J., and Fildes, P.: *Zeitschrift f. Chemotherap.*, Orig., 1912, I, 79.
-

## THE DIAGNOSIS OF INTRACRANIAL BLEEDING IN THE NEW-BORN

By H. G. SLOAN, M.D., F. A. C. S., Cleveland, Ohio

With our present knowledge of the pathological physiology concerned in increased intracranial pressure, we are able in most cases to make a correct diagnosis of increased pressure, as well as to localize the situation of the blood clot. The diagnosis is made more certain by our increasing experience in dealing with cases of this type.

Untreated intracranial hemorrhage in the new-born gives a mortality of 75 per cent within a few days after birth. The majority of those who recover suffer from diseases of the central nervous system—the result of scar tissue formed by the organization of the clot. As a result these poor unfortunates suffer from Little's disease, epilepsy or internal hydrocephalus later in life.

Wehye, of the Pathological Institute at Kiel, gives a summary of 959 autopsies of new-born babies. In 122 instances death was due to intracranial hemorrhage. Of these, eighty were found to have had a clot in contact with the dura; fifty-six in contact with the arachnoid; thirty-six in the substance of the brain; and twenty-one had hemorrhage in the ventricles.

Litzman adds further interesting statistics in regard to hemorrhage into the spinal canal. Of eighty-one autopsies in the new-born he found blood in the spinal canal of thirty-three. Of these, twenty-three were without injury to the vertebrae. Blood was usually found between the dura and the bone, but many of them had blood in the subarachnoid space mixed with cerebrospinal fluid.

The ordinary incidence of intracranial bleeding in the new-born is difficult to arrive at, varying as it does with the force of labor pains, with the skill of the obstetrician in making estimations of disproportion between the maternal pelvis and the fetal head, and the selection of the proper method of birth, as well as the mechanical force used in instrumental deliveries.

The mechanical factors that have to do with intracranial bleeding depend on both the extrinsic agencies and the anatomical structure of the infant's head. The size and shape of the maternal pelvis, as well as her age, are important factors. A contracted pelvis or a decreased obstetrical conjugate because of an encroaching promontory, will have a resultant effect on the



molding of the fetal head during birth. The bony pelvis in elderly women of the child-bearing period does not yield as readily as in younger women. The force of labor pains also has an important bearing. Owing to the great pressure exerted on the babe's body and placenta by the contracting uterus, the blood is naturally forced toward the point of least peripheral resistance, namely, the presenting vertex. This local increase of venous pressure may be sufficient to burst the delicate cerebral veins or to cause small petechial hemorrhages of the skin because of capillary rupture. The jugular and cerebral veins of the human contain no adequate valves to withstand back pressure. This is illustrated by case No. 4 referred by Doctor Maschke. Here we noted multiple pin point ecchymoses of the skin over the forehead, as well as intracranial bleeding. The mother of this child had borne thirteen children previously and this labor was spontaneous. The appearance of the skin resembles that seen in fat embolism where the multiple emboli plug the terminal arterioles and give rise to petechii. An allied condition is the so-called traumatic asphyxia seen in the adult where because of a crushed chest the little terminal blood vessels are ruptured through the agency of the back pressure in the veins of the head and neck so that the entire skin becomes black and blue, owing to the blood leaking out of the ruptured capillaries into the tissues.

Paul gives some illuminating side-lights on the occurrence of petechial hemorrhages in two hundred cases of new-born babes where he examined the eye grounds. He found retinal hemorrhages in 50 per cent born through contracted pelvises; in 40 per cent where labor was protracted; and in 20 per cent where the babies were born spontaneously.

Through the same mechanical principle of back pressure in the veins of the head, we occasionally see the apoplexy of childhood coming on during violent paroxysms in whooping cough.

Forceps play an important role in mechanical injuries to the fetal head—more especially when applied improperly. The ordinary forceps are so constructed that when applied properly on a fetal head of normal size they are unable to do any considerable damage by crushing, but in case the fetal head is unusually large this lateral pressure may be a factor in causing elongation of the fetal head in the anteroposterior diameter.

The incidence of fetal bleeding is favored because of the anatomical formation of the cranial bones and the related venous

sinuses. In the ordinary molding of the head during birth the bones which are loosely joined at their suture edges readily become overlapped. This occurs most frequently with the parietal bones, one being shoved under the other along the median line, according to which bone presents lowermost. In addition, when the labor is difficult the frontal bones may also be displaced backward underneath the parietal bones. The occipital has a tendency to be forced under the posterior edge of the parietal bones also, so that the normal molding of the head does not usually have an undue tendency to elongate the anteroposterior diameter. In case the head is elongated through the pressure of forceps, or because of the diameter of the maternal pelvis, the falx cerebri by its traction on the tentorium cerebelli may rupture the vena cerebri magna (Galen) or the *veinae cerebri internae*, which empty into the sinus rectus. The latter is the usual mechanism where we find bleeding in the ventricles. The delicate veins emptying into the sinus sagittalis superior from the upper convexity of the cerebrum are especially liable to be damaged by the overlapping of the parietal bones. These delicate veins run for several millimeters between the brain and the sinus, unsupported except by the filmy pia arachnoid.

In case of recovery from bleeding due to tearing of the tentorial veins, the child is liable to develop internal hydrocephalus from the healing scar tissue in this situation causing venous stasis. Tearing of the tentorium as well as the pushing of the occipital bone under the parietal are usually the mechanical factors from which bleeding under the tentorium occurs.

It will be remembered that the veins draining the lowermost part of the motor cortex—where the head and upper extremities are localized—empty into the sinus cavernosus, whereas those veins which drain the upper part of the motor area, over the region where the lower extremities are localized, empty into the sinus sagittalis superior. The most frequent site of rupture of the cerebral veins is over the vertex where they enter the sinus sagittalis superior, yet because of the position of the babe lying on its back the blood while still fluid drains down over the motor area supplying the face and upper extremities and clots there, so that it is in this distribution we first get irritation symptoms. Later on when the sinus sagittalis superior becomes obstructed by contact pressure of the clot at the point of rupture there is found more marked spasticity in



the lower limbs. The motor localization is inverted in the brain, *i. e.*, the members are projected upside down so the foot area is nearest the vertex. The more marked spasticity of the legs at a later stage in the bleeding results from the interference with the circulation through venous stasis over the area of these members' cortical localization. The stasis has a simultaneous effect on the opposite cortex also, so the resultant spasticity is bilateral.

The great majority of injuries to the cerebral veins occur during the act of descent through the birth canal. There have been several instances reported of intrauterine, intracranial hemorrhages, but in every instance there has been a history of external trauma of the maternal abdomen. There have been instances reported where there have been symptoms of intracranial bleeding coming on after an apparently normal birth, which are synchronous with the external appearance of hemorrhage from the various orifices of the body as seen in the pathological bleeding of the new-born. It is readily conceivable that the meninges might share in this bleeding with the various mucous membranes.

Let me recall to your memory the pathological physiology concerned in increased intracranial pressure. The fetal head although elastic forms a fairly rigid chamber where the pressure equals that of venous pressure—or, in other words—is very low. Increase in the intracranial pressure causes a reflex raising of the blood pressure by action of the general vaso constrictors of the body. In this way the attempt is made by the organism to supply the brain cells with sufficient blood in spite of their pressure anemia. The skin pallor coupled with the snapping of the second aortic sound, as well as the feel of the pulse in the femoral and brachial arteries, are the clinical indications that the blood pressure is raised. The small size of the infant's arms militates against accuracy in estimating blood pressure by the clinical sphygmomanometer. A lack of circulation in the brain or slowing of the circulation brings into action the stimulating effect of excess  $\text{CO}_2$ . Partial asphyxia is a marked stimulant to the vagus center, slowing the heart rate and increasing the output of the cardiac beat, at the same time stimulating the respiratory center. Too great intracranial pressure causes death of the brain cells because of pressure anemia, that is, sufficient blood cannot circulate through the tissues to supply oxygen and nourishment to the involved cells. Prolonged partial anemia is just as destructive in its effect as a shorter complete anemia. With the failure of

the cells in the brain to function, we see clinically an increasingly more rapid heart rate, a gradual fall in blood pressure, as well as shallow, irregular breathing, which oftentimes shows the Cheyne-Stokes type, ending in death. Fortunately for the race, the brain of the babe is able to withstand anemia or asphyxia over a longer period than the adult. Crile and Colley were able to resuscitate pups after the circulation had been stopped for twice as long as in normal adult dogs. Five to six minutes is given as the time of total cerebral anemia after which it is possible for an adult human to recover.

Prolonged pressure on the fetal head by a bony prominence may cause sufficient cell damage through pressure anemia to give cell changes. In case the brain has been injured during birth or the circulation obstructed in the umbilical cord, the resultant brain damage makes the child less able to breathe spontaneously. The resultant asphyxia adds another factor in brain damage. When brain cells are sufficiently damaged by asphyxia or pressure anemia to cause death to some of them, they become oedematous, which causes furthermore an increased intracranial pressure, as Cannon has so well shown. In many instances the loose jointing of the fetal cranial bones is sufficient to accommodate by their stretching at the suture lines this extra amount of brain volume. Irritation of the motor cortex arising from partial anemia or asphyxia causes twitching in the muscles of its distribution. If the cells are further damaged spasticity develops with increased tendon reflexes. In case of death of the motor cells a resulting flaccid paralysis occurs. Clonic and tonic contractions of the muscles are due to cortical involvement of the motor cells of the opposite side of the brain. In the intracranial bleeding of infants it is usually the cortical involvement that we depend on in order to make our localization diagnosis.

The clinical picture of the nerve muscle reactions in intracranial increased pressure is a changing one. Its variation is in direct proportion to the rapidity and amount of cerebral damage. They follow a definite cycle of normal reaction, hyper-excitability, rigidity, clonic and tonic spasms and, lastly, flaccid paralysis, depending on the time of observation with relation to the amount and extent of the cell damage.

#### **General Symptoms**

The normal child usually sleeps quietly after birth. The babe which has intracranial bleeding presents general symptoms



of increasing intracranial pressure. If the bleeding has been of sufficient amount at the time of birth, then there is found difficulty in inducing normal respiration. The infants are restless, moving the arms and legs, as well as making facial contortions. They will not take nourishment. If nourishment is forced upon them, it causes queer choking noises in swallowing. They have a peculiar cry, aptly compared by one of our well-known maternity nurses to the mewing of a cat. The restlessness and crying of the child is seen more in cases of bleeding above the tentorium, undoubtedly being due to the pain caused by stretching of the dura from the increased expansion beneath it. The child appears pale, and if attention be paid to the pulse rate it will be found to be slower than usual. There is a tendency, however, for the pulse rate to be affected less in rate than in the adult under the same circumstances. The pallor results from the vaso constriction in the attempt of the body to raise the general pressure to supply blood to the cerebral cells. The fontanel becomes more tense because of the increased intracranial pressure and one of the lambdoidal sutures where it joins the parietal over the bleeding area may be found gaping more widely than its fellow of the opposite side. The fontanel, however, may still remain sunken when there are well-marked symptoms of intracranial pressure increase associated with generalized convulsions. This fact was well illustrated in case No. 2, where in spite of a sunken fontanel the dura was pulseless where the parietal bone was raised at operation. The pulsation of the fontanel is absent. The venules of the eyelids which empty into the sinus cavernosus may be more prominent than usual, especially over the side where the hemorrhage has taken place. Examination of the eye grounds is unsatisfactory in the babe because of their restlessness and the possibility of a contracted pupil on the bleeding side. The skin venules furnish the same evidence that we may obtain on ophthalmoscopic examination. The vital centers in the medulla are not so markedly affected at the start as in the intratentorial bleeding, so that respiration may remain unaffected for some time. With the increase of pressure over the cerebrum there may be noticed the twitching and spasmodic movements of the muscles supplying the opposite face and arm. This locality is affected first because in general the large proportion of bleeding occurs from the veins in the vertex. The blood runs down over the convex surface of the cerebellum because of the babe's position in bed, and accumu-

lates over the lower motor area, causing irritation to the cortical region which supplies the face and arm. Upon examination it may be found that the spinal accessory which supplies the sternocleidomastoid is progressively affected, showing increased muscle tone. Spasm of this muscle causes spasmodic contraction of the sternocleidomastoid, turning the head toward the side on which the bleeding occurs. Later, as pressure increases, the sinus sagittalis superior becomes obstructed from pressure contact with the clotted blood. The resultant excessive spasticity of the lower limbs then occurs because of the venous obstruction of their centers. The child becomes comatose and as the pressure increases from the clot and cell edema there is seen the resultant muscular paralysis giving the flaccid type, with lack of deep tendon reflexes. The babe's breathing is affected, first slowed and deepened, then respiration becomes rapid and shallow, blood pressure starts to fall with the increasing rapidity of the heart rate, and finally death results with cessation of respiration, the heart continuing to beat longer. The pupils during the irritative stage are contracted and later on when paralysis occurs they become widely dilated and do not react to the light. During the stage of irritation, namely, while the child is having clonic and tonic muscular contractions, there occur interruptions of the respiration in true convulsions with cyanosis and apnea. At the end of this convulsion, when the respiration is resumed, there is often noted in supratentorial bleeding the temporary relaxation of the vaso constrictors, causing a wide-spread skin blush. Pressure over the fontanel may at this stage start a convulsion.

In localizing the situation of supratentorial bleeding we must exclude possible traumatic injuries of the facial nerve through forceps and pressure on the bony pelvis of the mother. These tend to clear up after three or four days. A point of trauma must be looked for behind the angle of the jaw where the facial nerve emerges. Slow hemorrhage is easier to diagnose than where it has been more rapid. Spasticity and spasm of the muscles supplied by the affected cortices are then more readily detected. In the terminal stages where stasis of the venous circulation in the sinus sagittalis superior with edema of the brain is taking place, it is especially difficult to localize a hemorrhage because of the universal involvement of both sides of the body in spasticity or paralysis. The place where the spasm with hyper-



tonus of the muscles and increased deep reflexes first appears in the body gives the most valuable evidence toward cortical localization of the clot. During a convulsion these evidences of cortical irritation are accentuated and offer greater contrast to that found on the sound side. Hypertonicity of the motor branch of the trigeminus causes trismus. Bilateral paralysis of this nerve causes the jaw to droop because of its innervation of the masseter muscles. Not much reliance can be placed on ocular symptoms because of the difficulty in determining whether a strabismus is due to an irritation or a nerve paralysis. To those interested in the detailed clinical picture I would suggest the perusal of Leitz's masterly article in the *Arch. für Gyn.*

#### **Subtentorial Bleeding**

The child lies quiet, showing no movements of any extremity, and seldom cries. Because if the pressure is sufficient to cause tentorial stretching and therefore pain, the medullary centers are rapidly involved, with resulting death. There is slight cyanosis of the skin instead of the pallor connected with supratentorial bleeding. This arises from early involvement of the respiratory center in the medulla. The child is liable to have mystagmus. Blood running down the spinal subarachnoid space gives symptoms of spinal irritation, namely, stiff neck, with the resulting bilateral rigidity of the whole musculature. Lumbar puncture in these cases shows cerebro-spinal fluid mixed with blood, whereas in the supratentorial type the fluid may be clear because here the bleeding usually occurs between the dura and the arachnoid. This plane is shut off from the subarachnoid space where the cerebro-spinal fluid is present. As the pressure increases there is an interruption of the blood flow in the sinus rectus with the damming back of the blood flow in the venae cerebri internae and resultant brain edema. There is less tendency to bulging of the fontanel in the early stages, but later when the brain edema comes on the bulging may be as marked as in the supratentorial type.

#### **Intraventricular Hemorrhage**

##### **Difficult to Distinguish from Cortical Type**

The babe is restless, shows a bulging fontanel, with spasm of the muscles, bilaterally, and general muscular rigidity. When the blood leaks through the fourth ventricle the primary involvement is of the respiratory center.

### **Supra and Infratentorial Combined Bleeding**

In these cases death is not long delayed, owing to the great effusion of blood. Localization is difficult. Early irritation of the motor areas shown by cramps or spasticity of the muscles is our best aid to localization. It is well-nigh impossible to differentiate bleeding into the spinal subarachnoid from hemorrhage occurring just beneath the tentorium. Spinal bleeding gives rise to the so-called tetanus, early described by A. Marion Sims, where the whole child becomes so rigid that it can be stood up against the wall.

### **Injury to the Brain Without Bleeding**

This may arise from pressure on the fetal head from the maternal bony pelvis, usually the promontory of the sacrum, or because of trauma from forceps. The differential diagnosis from bleeding is most difficult. The symptoms arise from pressure anemia and the consequent edema. Muscular spasms and the tense fontanel are present. Early involvement of the motor areas as shown by muscular spasm points more to hemorrhage.

### **Treatment**

In every case where there has been difficult labor, where instruments have been used or where the labor pains have had unusual force, the child should be closely watched for the first three or four days after birth. Symptoms arising from birth hemorrhage may become evident only five or six days later. Where there is any question of brain hemorrhage the child should be kept quiet and moved as little as possible, as any sensory stimuli are prone to cause a general convulsion. With the appearance of symptoms of general increase in the pressure, slow pulse, tense fontanel, with muscular spasms, it is wise to do a decompressive operation over the suspected area of bleeding. In cases of edema due to injury of the brain alone, without bleeding, the same rules are adopted, namely, to interfere and to do a decompression when the signs of increased pressure are marked. Although the suture lines of the cranial bones in the infant are loosely joined and although this factor may allow for a certain amount of expansion of the fetal brain, yet it may not be sufficient to tide the child over this critical period, whereas decompression may be life-saving.

The decompression should not be delayed until the compensatory stage of Kocher is passed. The best results from opera-



tion are seen when it is done while the pulse rate is still slow and before respiration becomes irregular. The cells of the centers relieved of their compression at this stage always live. If, however, operation is deferred until signs of failing compensation are apparent through rapid heart rate, less booming second aortic sound and irregularity of respiration, then there is grave danger that although the operative procedure is successfully accomplished, the child will die within the next few hours because the brain cells have been irreparably damaged.

### Operation

*Parietal decompression:* The babe ought to be well wrapped in a warm blanket and laid on several half-full hot water bottles, care being taken not to place the hot water bottles in contact with the skin. The whole head is then shaved, because in some instances it may be necessary to do a bilateral operation. The skin is prepared with alcohol after cleansing with benzine, and a rubber tourniquet applied around the frontal occipital circumference just above the ears. This tourniquet is put on after the head has been covered with a single layer of gauze saturated with alcohol. We aim to do these operations under as little anesthesia as possible, but where it is needed we prefer a few whiffs of ether. The reason for this is that the resultant fall of blood pressure during complete surgical anesthesia may be just sufficient to deprive the struggling vital centers of enough blood to cause their death and thus lose the infant. Moreover, these babies are unconscious, and frequently they make no movement or outcry during the whole operation until the brain pressure is relieved. A little pain causes a beneficial rise in blood pressure, for the sustenance of the struggling cells.

The incision is made through the skin and fascia down to the periosteum just inside the concave edge of the parietal bone, extending 1 cm. from the mid-line well down toward the ear, and following the contour of the bone. The periosteum is then pushed aside along the concavity of the suture line and the edge of the suture opened sufficiently by a sharp knife through its cartilaginous border to allow the introduction of a pair of strong-bladed curved scissors. The bone is incised along an oval line about 1 cm. from and parallel to the suture line, care being taken to avoid the area of the suture because here the dura is adherent to the overlying cartilage. The base of the incision is made

omega-shaped—that is, narrow at the bottom—and extends to just above the ear where the bone flap will be approximately 5 cm. in breadth. Here the bone is broken between two strong hemostats, care being taken not to damage the dura by the rough spicules caused by the fracture. The dura is opened with a sharp-pointed knife after picking it up with needles. The incision is made about 1 cm. distant from the bone cut in order that the dura may be closed accurately. All vessels cut in the dura are divided between fine silk sutures and the dural flap is reflected downward. Dark coloration beneath the dura points to the blood clot immediately beneath it. The greatest care and gentleness are necessary in making the dural incision to avoid the cerebral veins lying in immediate contact with it. In case the clot is opened down upon directly, it is evacuated. In a case where the brain bulges, the base is very gently explored with a flat, smooth instrument, raising the brain in order to see if there is any unclotted blood mixed with the cerebral spinal fluid over the base. In case the blood is clotted we merely evacuate the clot, replace the bone and close the wound without drainage. In case the cerebro-spinal fluid is mixed with blood and is unclotted it is wiser to introduce a rubber tissue covering taken from a cigarette drain, for the first 24 hours. The edematous brain exudes a large amount of fluid immediately after operation, so that I think the advantage of displacing this by means of a drain overbalances any danger arising from possible infection. In case the bulging brain makes the closure difficult or impossible it is wise to do a lumbar puncture in order to further relieve pressure before closing. Accurate closure of the dura is absolutely necessary in order to avoid subsequent scar formation between the suture line and the cortex. The gentlest possible manipulations must be used at all times in order to avoid injury of the brain substance and the vessels supplying it. Where no bleeding is found and yet the brain bulges markedly, it will be wise to do a bilateral decompression in order to allow sufficient expansion arising from brain edema. Where ventricular bleeding is suspected this is evacuated by a hollow needle.

With the diagnosis of subtentorial bleeding the operation is a much more dangerous one. It is wise previous to the operation to introduce a lumbar puncture needle attached to a syringe into the lumbar subarachnoid space but not to draw out any of the fluid until it may become necessary. Warning symptoms, shown



by failing respiration or a rapid heart, due to the pressure of the operator on the skull, call for the extraction of small amounts (1 c.c.) of spinal fluid to relieve tension until the decompression can be made. If too much spinal fluid is withdrawn where the pressure in the occipital space is marked the brain stem is driven down into the foramen magnum with the resulting anemia of the medullary centers from pressure. Extension of the head offers the greatest relaxation to the subarachnoid space—so we aim to avoid any flexion during the operation.

We use the Cushing cross-bow incision in doing a decompression over the occipital region. The same technique is followed in cutting the occipital bone and in raising the dura as in the parietal operation.

In general new-born babes stand operations of all types very well. These brain cases, however, show an average mortality of 50 per cent after operations. Loss of blood during these operations is to be carefully avoided because of its rapid effect in lowering blood pressure. Our hope for them lies in earlier diagnosis and earlier operation when the babe is in the best possible condition and before too severe resulting damage has happened to the central nervous system through pressure anemia. So far, in those recovering from operation, we have seen no resultant brain damage become apparent. In after life they thus show a marked contrast to the small proportion of their fellows who happened to live without operative intervention.

### Summary

In case of difficult or prolonged birth, where there has been a difficult instrumental delivery, or where there is tardy starting of spontaneous respiration, the babe ought to be carefully watched for the next few days to see if there is any evidence of cerebral bleeding.

Early symptoms of cortical irritation are most valuable in localization of the bleeding. Bleeding above the tentorium can be differentiated from that occurring below it. When symptoms of general increase in intracranial pressure become marked a decompression operation ought to be done.

The best results are seen when decompression is done while the pulse rate is still slow and before respiration becomes irregular.

## Bibliography

1. Bénke: *Münchener Med. Wochen*, Oct. 11, 1910, pp. 21-25.
2. Cannon: *Am. Jour. Phy.*, Vol. VI, p. 91.
3. Crile and Dolley: *Jour. Exp. Med.*, X, 6, 1908.
4. Cruveilhier: *Anat. Pathol. sur l'Apoplexie des Nouveaux nés*.
5. Cushing: *Amer. Jour. Med. Sciences*, Oct., 1905.
6. Evans: *British Jour. Children's Diseases*, Vol. I, p. 207, 1904.
7. Freud: *Nothn. Sp. Path. and Ther.*, 1897, bd. IX, theil III..
8. Hill: *Path. Careb. Circul.*, Albutt System Medicine.
9. Hecker: *Verhand. der Geschel. von Geburtskunde Berlin*, 1853.
10. Holmes and Sargent: *Brit. Med. Jour.*, Oct. 2, 1915, II, No. 2857, p. 493.
11. Kennedy: *Dublin Journal*, Vol. 10, p. 425.
12. Little: *Trans. London Obst. Soc.*, III, 1862, p. 293.
13. Litzmann: *Arch. fur Gyn.*, 1880, bd. 16.
14. McNutt: *Jour. Med. Sci.*, 1885, p. 89.
15. McNutt: *Am. Jour. Obsts.*, 1885, XVIII, p. 73.
16. Phillips: *Cleve. Med. Journ.*, Vol. 14, No. 8, p. 533.
17. Seitz: *Arch. fur Gyn.*, Vol. LXXXII, 1907.
18. Sims: *Am. Jour. Med. Sci.*, April, 1846.
19. Smelley: *Midwifery*, 1772, Vol. L, p. 230.
20. Turnbull: *Brit. Med. Jour.*, March 24, '06, and Feb. 10, '06.

---

**Radium in Parotid Tumor.**—Richard Weil, New York (*Journal A. M. A.*, Dec. 18, 1915), publishes a case of tuomr of the parotid, treated by radium, the first, he thinks, of the kind that has been submitted to a careful microscopic examination following such treatment. The tumor was of seven years' duration,  $3\frac{1}{2}$  by  $2\frac{1}{2}$  inches, firm and resistant to pressure and fairly well margined from neighboring healthy tissues. It had caused deformity of the ear, exophthalmos and facial paralysis. A small specimen was removed from the tumor and examined microscopically. It presented an appearance like that frequently described as cylindroma and was diagnosed by Doctor Ewing as adenoid cystic epithelioma. Weil discusses the nature of the so-called cylindromas of Billroth and finds that they resemble the basal celled group of tumors in certain respects, but he does not think that they have an epidermal origin, but that they rise from the salivary gland itself, not improbably from congenitally ectopic masses of glandular tissue which assume an excessive but not a malignant growth in later life and hence give some reason for rational expectation of improvement by radium treatment. A small incision was made into the tumor behind the ear and a trocar driven in to the depth of about an inch. Into this cavity a tube containing radium was introduced. In all, the patient received eighteen such applications. The tube, consisting of 19 mg. of radium bromid shielded by 1 mm. of lead, was left in position at each application for four hours. The applications were made at first at intervals of three or four days and subsequently at intervals of a week or more. They caused no pain and very little local reaction. Within two weeks the tumor began to diminish throughout its entire extent and the induration gradually disappeared. In a little over a month the patient was discharged. The tumor had almost entirely disappeared and the parts been restored to an approximately normal condition, though the lobe of the ear was still slightly swollen and the facial paralysis, probably due to destruction of the nerve, persisted. The patient returned to the hospital at intervals for treatment, and now after almost two years the tumor has not recurred.

---



## TYPHOID FEVER IN CLEVELAND IN 1914

By T. E. COX and R. G. PERKINS, from the Laboratory of Hygiene,  
Western Reserve School of Medicine, Cleveland.

This report is the fourth of a series dealing with typhoid fever in Cleveland. While the weather conditions offered nothing so unusual such as the flood of 1913, still there was much of interest. Conspicuous among these was the marked reduction in the number of cases; from a total of 436 in 1913 to a total of 271 for 1914. This represents a decrease of nearly 40%.

The sources of information were similar to those noted in the previous reports. We are especially indebted to the Department of Health for the use of their reports of incidence and mortality, and to the City Laboratory in that Department for their records of the administration of hypochlorite. We are also indebted to the Federal Weather Bureau for information as to winds, precipitation and ice conditions. In addition we are also especially indebted to Dr. D. B. Lowe for much information regarding the latter part of the year, as at that time he was making a very thorough study of typhoid conditions in his capacity as District Physician in the Department of Health. In quite a number of cases the information thus obtained was supplemented by personal investigation into the individual cases.

It has been attempted to obtain the date of incidence rather than the date of report, as this makes a marked difference in the curve. This was done successfully in about 80% of the cases, the improvement being due to the fact that better attention was given to securing this data at the Health Department.

### Division of the Year

As in previous reports, the year has been arbitrarily divided into two parts, one including those months in which it is *possible* for cases to have been due to fly infection, namely, July to November, inclusive, and the other including those months in which such transmission is *negligible*, namely, January to June, inclusive, and December.

---

\*This work, done by T. E. Cox, was presented as a thesis in the regular Course in Hygiene in the third year.





### Distribution

The pin map for the year showed a very uniform distribution with the exception of a few scattered clumps. In general the density of incidence is in close relation to the density of population as has been the case in previous years. It is most consistent in the cold weather periods but holds good to a remarkable extent even in the summer months. The exceptions are in the outskirts of the city where the increase in population has outsped the city improvements. This uniformity of distribution points towards a central origin or to a series of local origins with an evenness of arrangement which appears, to say the least, improbable. As noted in previous publications the means of distribution of the milk and food supplies are such that no general set of infections can be attributed to them, and indeed where either one of these is at fault the evidence is usually at once suggestive. We therefore feel that in the number of cases in which no other etiology is suggested a fairly definite proportion must be set down to the only central source in Cleveland, the water supply.

Moreover in comparison with the map of the preceding year there is a distinct lessening of cases which suggest local etiology, even in the fly season. In 1913 there was a more or less constant epidemic in the newly annexed parts of the city, such as Collinwood and Nottingham, lasting from July to October, which is much less conspicuous this year probably on account of the efforts of the Bureau of Sanitation.

Yet even so, with more open land, barns, etc., giving a better opportunity for the breeding of the fly, there must have been some cases with the fly or local water supply as source of infection. But the great majority of cases in Cleveland must look to some central source for their source of infection, or to individual contact cases due to carriers or missed cases.

### Localized Epidemics

There were only two localized epidemics in 1914. The first occurred in Collinwood in February, and consisted of 19 cases. On investigation by the City Laboratory the source of infection was found to be in polluted water from the mouth of Euclid Creek, gaining access to the drinking supply of the L. S. & M. S. R. R. Shops. As soon as the source of infection was located and the leaking valve repaired there was a sudden stoppage of new cases.

The second occurred at an institution in the southeastern part of the city, which has its own milk supply and uses water from a large well on the premises for drinking and domestic purposes although the city supply is also available. Examination of the water showed presence of colon group organisms; the well itself was protected, but there were two possibilities of infection. Just outside the grounds there is waste land with sandstone gullies, which showed surface water with frequent masses of excreta. Through the courtesy of the City Fire Department we were able to flush the gully with a solution of fluorescein, but even thorough pumping out of the well did not show any of the stain.

The other source which appeared possible was from the stables. Here the use of fluorescein was impracticable, but the evidence against the water still appeared insufficient. One of the teachers in the school had recently come from out of town, and was taken sick immediately with what proved to be typhoid. This possible etiology was at first neglected because it was stated that there was no possibility of contact, but after the water investigation proved unsatisfactory it was pursued farther. The evidence was conflicting but it looked as though it was quite possible for contact to have taken place, at least in the first few days. A greater degree of isolation was then practiced, and this more or less coincided with the cessation of new cases. The evidence is not complete but appears sufficient to show a local cause, either water or contact, as the cases were spread too widely to be traceable to one food infection. The probability is in favor of secondary cases from the imported case.

Two other cases, occurring in workmen living in the city but engaged in road-making in the outskirts, are probably attributable to the use of a highly polluted well in the locality, water from which was used in a boarding house across the road, in which other suspicious cases had occurred in the past year. As the previous cases were not within the city limits and none of them happened to come into any of the hospitals, they had not come under accurate observation and it cannot be said with certainty that they were typhoid.

In addition to these there were five cases arising amongst the members of a dinner party given in November, and considering their sequence there is strong grounds to believe the etiological factor came under the head of food or beverages. However,



a thorough examination of the milk and butter supply showed nothing. Possibly the water used to wash the lettuce or other vegetables eaten raw was infected, but no evidence could be found. Nor were there any further cases following at that time which would point a clue in regard to these factors. The history of the persons at the dinner did not suggest the presence of a carrier either among the diners or the help.

### Etiology

*Food and Beverages*—With the exceptions as noted above there was no evidence of any especial cases coming under these heads. The total number of cases for the year is sufficiently small to make any group with a single date of onset very conspicuous and there seems no reason to believe that many cases other than those cited may be considered as coming under this head.

*Flies*—This year even less than in preceding years has there been suggestion of marked localizations which might be due to fly transmission. The reduction of the number of privies and the other improvements in sanitation brought about by the Health Department together with the increase in regularity of the removal of manure have undoubtedly much to do with this. The substitution of the automobile for the horse in the thinly settled districts may also be of importance as it is just in these places that the fly may most readily gain access to typhoid feces. The impression continues that at this latitude the fly as a means of typhoid transmission is of very minor importance.

*Contact*—Very few cases were noted this year in which the factor of contact was suggested. With the exception of the institutional epidemic above noted, there was little or no evidence of cases. It is of course true that in the absence of satisfactory reporting of cases and the associated possibility of missed cases leading to secondary cases, there may have been some due to this. Careful inquiry failed to show suggestive data. Even in the worst housed areas there was nothing. The data which will be of most value in determining this point will come after the establishment of filtration with the consequent elimination of the water as a source of danger. Cases of unknown etiology may now of course be attributed to water, flies or to contact according to the inclination of the observer; and the removal of one of these possibilities will be of great value.

### Water Supplies

This is the factor toward which the distribution on the map points to with decided emphasis. This may be considered under two heads, local supplies and the central city supply. It is the latter that we are chiefly interested in, although a few cases have been traced to infected wells, etc. As to the local supplies, those possibly infected are mainly the ones in the outskirts of the city. The park springs and those in the central part of the city are also used but are under constant supervision of the City Laboratory and no cases were traced to them. However, in the outer borders of the city are many old farm wells and springs still in use, which have become progressively polluted by the extension of the city population in advance of the city sanitation. Possibly many of the cases in the suburbs divide their causative factors between the fly and the well. Two cases of this kind were traced to the use of workmen drinking from wells which were badly polluted with intestinal bacteria.

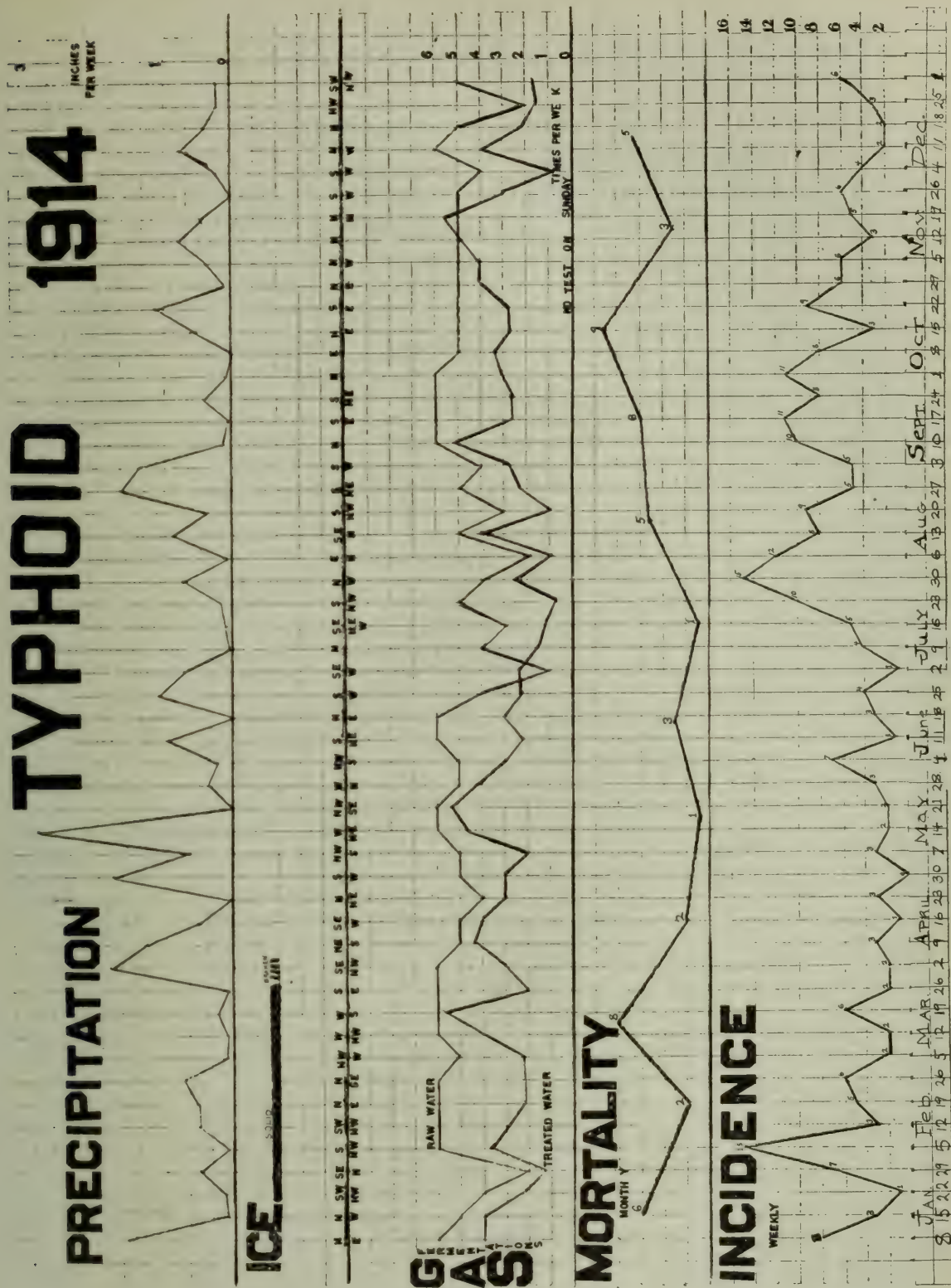
*City Water Supply*—The history of the city supply is best obtained from the records of the city laboratory, from which we have taken the following details.

### City Water Supply

Samples were taken daily from the tap at the City Laboratory, at 421 Superior Ave. In addition samples were taken daily except Sundays and holidays from three openings at the East 49th street pumping station. Sample 1 represents Raw or Untreated Water, taken from the main shaft before the entrance of the hypochlorite solution. Sample 2 represents water treated about two minutes, and taken at the outlet of the pumps. Sample 3 represents water treated about thirty minutes, taken either at the tap in the yard or the tap of the wash-room, according to the weather. Inasmuch as the Laboratory water represents water treated more than one hour, a wide range of contact time could be compared.

The tests used for presence of pollution are the presumptive tests for intestinal bacteria, using the routine lactose peptone bile method, this test being accepted as conclusive and in agreement with the experience of other experts in water analysis. Accordingly in the Tables relating to Water, the term "Positive" indicates gas formation in lactose bile within 72 hours at body temperature.





## CHART I

This chart shows the summary of the typhoid for 1914, together with the rainfall, the weather reports, the laboratory findings and the incidence and mortality. The dates as shown in the lower border carry through vertically so that the incidence for any given week may be studied in relation to the weather and laboratory conditions in previous weeks, and the bearing of these conditions on the curve may be seen. The RAINFALL is in total inches per week, with the figure noted at the top. The heavy line shows the presence of an ICE sheet over the lake, the broken portion at the end indicating the period of floating ice. The prevailing WINDS for the week are shown below the ice record, the weekly prevalence above the line, the monthly prevalence below it. The portion marked GAS shows the fermentations as recorded in the City Laboratory. Here the upper line shows the number of fermentations of lactose bile each week in the raw water, while the lower line shows the average of the three daily examinations of water from three points in the service, the pump, where the water has been treated for about five minutes, the yard, where it has been treated about thirty minutes, and the laboratory tap, where it has been treated about an hour and a quarter to an hour and a half, according to the estimate of the water department. The curve of the MONTHLY MORTALITY has the total number of deaths for that month noted at the proper points, and the WEEKLY INCIDENCE below is marked in a similar manner. Comparison with the similar chart in the record for the previous year will show a general rise of the level, most marked in the spring, and coinciding with the period after the flood.

Table 1 gives the extent of the findings of intestinal bacteria from each of the four sources during the year. It is interesting to note that the reduction in pollution in the treated samples as against the raw samples is even less than last year.

Table 1

Month	Lab'y Tap.		Pump		Washstand or Yard		Raw	
	Total	Percent Pos.	Total	Percent Pos.	Total	Percent Pos.	Total	Percent Pos.
January .....	31	52.9	26	53.8	26	42.5	26	73
February.....	28	53.5	23	65.2	23	26.0	23	100
March .....	31	48.4	26	61.5	26	50.0	26	92.3
April .....	30	70.3	26	61.5	26	61.5	26	80.8
May .....	31	77.4	25	64.0	25	72.0	25	88.0
June .....	30	46.6	26	46.1	26	29.2	26	74.6
July .....	30	30.0	25	28.0	25	28.0	25	64.0
August .....	31	30.2	26	34.6	26	42.5	26	61.5
September .....	30	50.0	25	76.0	25	56.0	25	96.0
October .....	31	51.6	26	61.5	25	48.0	25	84.0
November .....	30	60.3	24	70.8	24	58.3	24	79.2
December .....	31	38.7	26	57.7	26	38.4	26	73.0
	364	50.8	304	56.5	304	46.0	304	80.5

Table 2—Raw Water Samples

	1906	1907	1908	1909	1910	1911	1912	1913	1914
January .....	12	12	16	1	5	16	*	18	19
February .....	11	11	12	6	10	13	9*	14	23
March .....	17	15	13	10	16	17	19	14	24
April .....	17	17	3	1	7	11	16	22	21
May .....	12	16	7	9	12	11	11	23	22
June .....	20	16	10	4	17	15	18	22	20
July .....	17	17	11	9	14	12	17	19	16
August .....	22	13	16	10	18	8	16	6	16
September .....	21	16	7	14	14	2*	14	11	24
October .....	21	16	13	12	21	*	16	13	21
November .....	14	15	7	9	14	*	12	19	19
December .....	7	5	2	12	9	*	4	25	19
Total.....	191	169	117	97	157	104	152	206	244
Monthly average ....	16	14	10	8	13	12	14	17	20

Tables 2 and 3 relate to changes in the character of the water in connection with the chlorine administration. Table 2 shows the monthly findings of fermentations of lactose bile in untreated water since the use of this medium was begun. It shows clearly that the water as obtained from the Four Mile Crib

\*Chlorine started September, 1911, and no raw samples were taken until February 8, 1912.



# 1914

## HYPOCHLORITE DOSAGE WEEKLY TYPHOID REPORTS

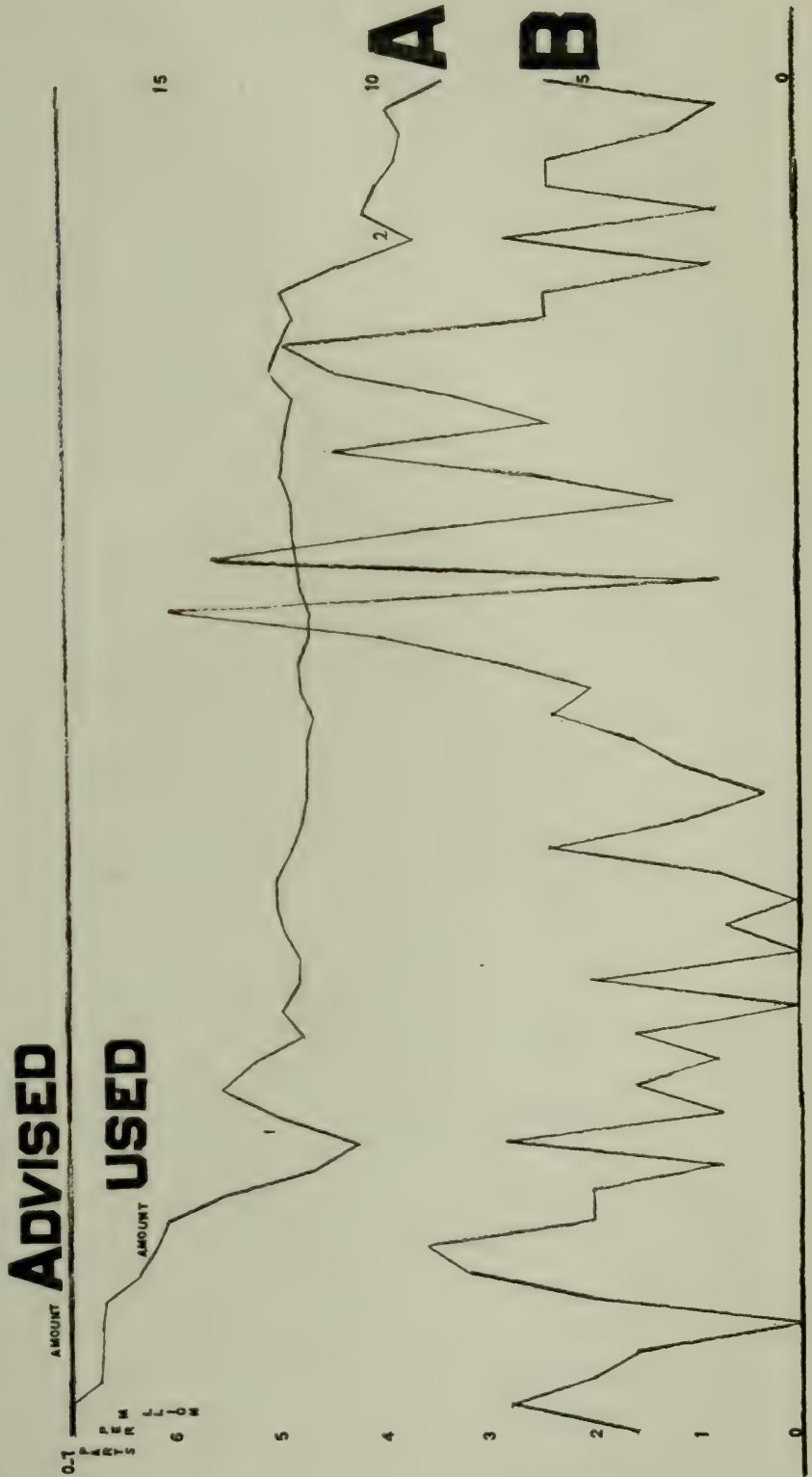


CHART II

This shows the relation of the dosage of hypochlorite (A) to the reported weekly typhoid incidence. (B) The weekly incidence in this chart includes *all cases as reported*, without regard to their origin or the actual date of onset. The upper line shows a dosage of 0.7 parts per million, which was advised as the minimum necessary in ordinary conditions of the raw water.

Again, increases in dosage are seen to follow increases in *reported cases* at (1) and (2).

has been more or less constantly polluted, and if anything, that the pollution is constantly becoming greater. A positive result is recorded in these summaries if there was gas in the one-tenth, the one or the ten cubic centimeter tube.

Table 3

Month	1911		1912		1913		1914	
	Times	Parts per m.m.	Times	Parts per m.m.	Times	Parts per m.m.	Times	Parts per m.m.
January .....			12	0.732	14	0.337	16	0.681
February .....			6	0.719	15	0.371	15	0.608
March .....			15	0.541	11	0.387	16	0.492
April .....			19	0.566	27	0.579	22	0.493
May .....			20	0.493	25	0.585	24	0.480
June .....			12	0.407	23	0.579	14	0.462
July .....			9	0.319	23	0.593	9	0.442
August .....			8	0.450	16	0.453	11	0.473
September .....	6*		8	0.409	17	0.429	19	0.486
October .....	16	0.944	7	0.403	14	0.460	16	0.487
November .....	11	0.872	9	0.408	21	0.554	19	0.430
December .....	9	0.586	6	0.389	24	0.637	15	0.389
<hr/>								
Total.....	40		128		230		196	
Monthly av. ....			11		19		16	

\*Began September 11.

Feb. 1-22, inclusive, 0.750.

Feb. 23-29, inclusive, 0.338.

Table 3 shows the monthly fermentations in the treated water since the beginning of the chlorine administration and the average monthly dosage in parts per million as calculated from the daily reports received from the Water Department. The column of "times" is made by taking in each month the total of the days in which fermentation is found in any one or more than one of the three treated samples.

The increase in pollution is present in 1914 spring months as well as in the two former years but it will be seen that the dosage was not increased as heretofore. It should also be noted that the apparent excess of pollutions in the treated water samples over the raw water samples is due to the fact that each day three treated samples and only one raw sample are examined. There is also a marked degree of irregularity in the degree of pollution at different times, so that two samples taken an hour or so apart may vary markedly.



### Imported Cases

As in previous years these have been divided into those which were clearly out of town, probably out of town or possibly out of town, according to the probable dating of the day of infection. The cases which developed the disease within three weeks of the arrival in town have been classified as out of town, though it is of course possible that some of these had short periods of incubation and developed the disease through etiological factors acquired in Cleveland. Cases which resided in Cleveland for a period longer than three weeks prior to the date of the infection but were in and out of town constantly were classified as possible and probable in proportion to the amount of their absence and also to the presence of marked typhoid conditions in the places in which they had been. Practically all the cases of the latter type were of similar character and in the final classification only two groups were made, namely, the *certainly* and the *possibly* out of town cases. Of the total of 70 cases 33 were in the *certainly* and 37 in the *possibly* out of town class. As will be seen from Chart 3, about two-thirds of the out of town cases occurred between July and November or were coincident with the vacation season. They gave histories of drinking water at many places and it is reasonable to assume that the great majority obtained their typhoid elsewhere.

### Summary and Conclusions

The total number of cases shows a marked decrease over preceding years, and when the out of town cases and those referable to special etiological factors are removed and a curve constructed, this residual curve is surprisingly even, never running above seven cases a week, and usually averaging about three. It is this residual curve that should be affected by the acquisition of a really pure water supply. As will be seen in Chart 2, the administration of the hypochlorite has been consistently under the normal advised, and the fermentations in the water have been far too frequent. In the absence of heavy rainstorms and similar weather conditions, however, the number of dangerous organisms reaching the crib has been less than usual, and there is of course no doubt that the administration of even an insufficient amount of hypochlorite is not without effect.

The evidence in the individual cases has enabled us to cut out a large number as cases for which Cleveland is not responsible, in addition to another group in which especial local condi-

# TYPHOID INCIDENCE 1914 WEEKLY

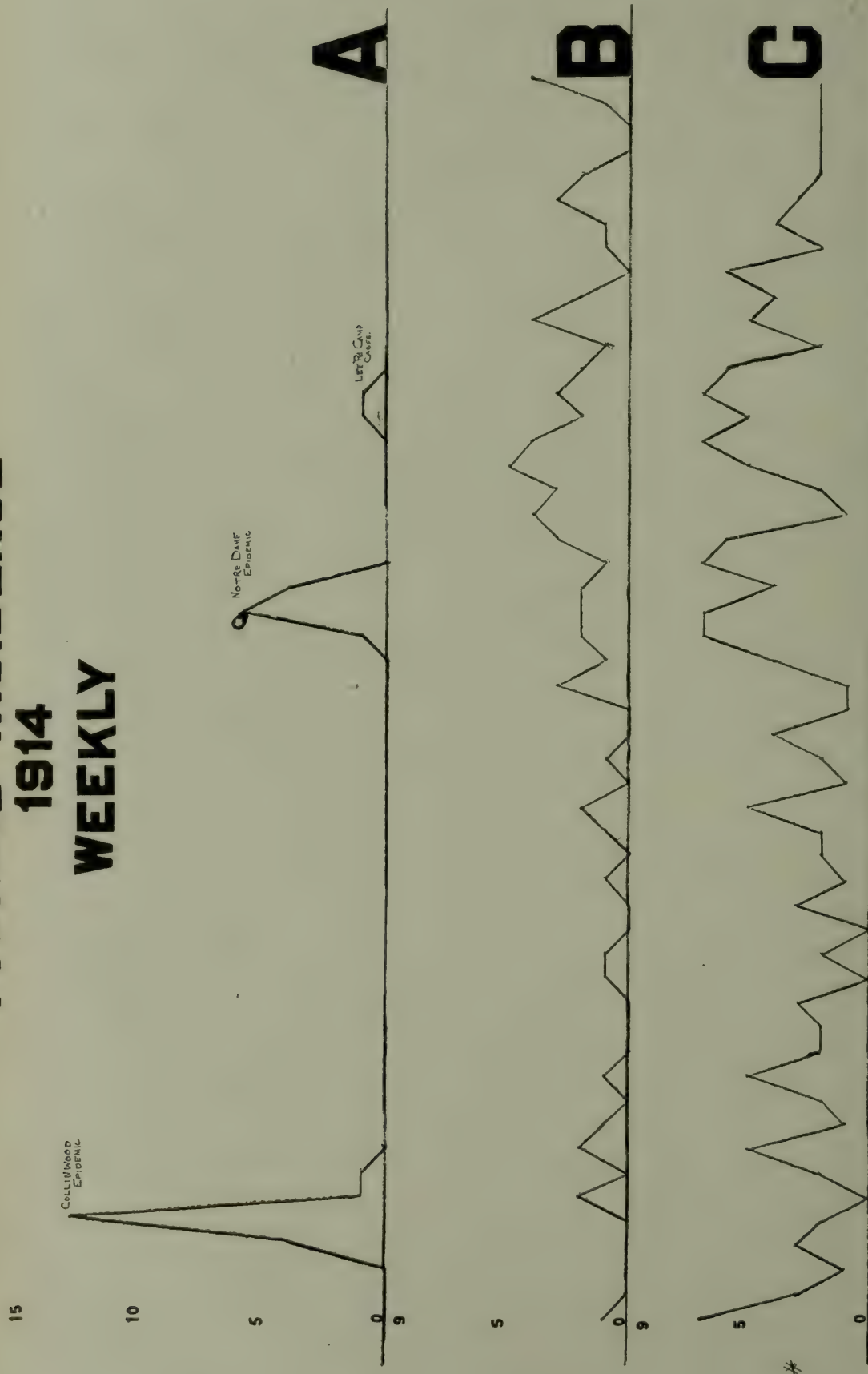


CHART III

Analysis of WEEKLY INCIDENCE for 1914. Curve A—Cases due to LOCAL ETIOLOGICAL FACTORS, such as milk, contact, etc. Curve B—Cases PROBABLY and POSSIBLY IMPORTED as well as those CERTAINLY IMPORTED. Curve C—Cases reported in addition to these. In other words CASES IN WHICH WE HAVE NO EVIDENCE OF LOCAL FACTORS OR OF EXTRA MURAL ORIGIN.



tions play the main part, so that we may consider a modified incidence and death rate as noted in the original tables. We continue to believe that the present insufficiently chlorinated water supply is responsible directly for a fair proportion of our cases and also indirectly in the matter of contact cases from the direct infections.

---

**Alcohol and Insanity (An Authoritative Statement).**—"It is important that the public should know that the frequency of mental disorders due to alcohol, differs very much in different nationalities and different strata of the population. In the much maligned state of Maine, there is absolutely no doubt that alcoholic insanity is relatively much less frequent than in any other state that I know of; and when we study the nationalities of any one community, as I did in Massachusetts and as Dr. George H. Kirby did for New York, we find that those nationalities that indulge largely in the social habits of alcoholism or in ordinary use of alcohol, recruit the largest number of cases of alcoholic insanity in our hospitals. The percentage varies from less than 1 per cent. to 39 per cent. of all the admissions from the various nationalities."

"Alcoholic insanity is very rare among the Hebrews, who for reasons worth studying, furnish a model standard; it is most frequent in nationalities accustomed to strong liquors. There is an average of about 20-25 per cent. of alcoholic insanity among the male admissions in wine and beer-drinking communities. \* \* \* Any effort to fight alcoholism will help us as much as it will help the criminologist and the charity worker, because it is not merely an individual problem but really one of communities. What I feel most keenly is the necessity of organizing in our communities, societies for total abstinence, to which it would be possible to join individuals who are recovering from the warning effects of disease. Unless recovering individuals join groups of normally-living persons maintaining standards of total abstinence and providing social compensation for drinking habits, it is not often that they will resist for any length of time the attractions of alcohol and the attractions of destructive social companionships."—*Adolph Meyer, M.D., Phipps Psychiatric Clinic, Johns Hopkins Hospital.*

---

**Food Poisoning.**—An epidemic of food poisoning from eating pie from which the *Bacillus paratyphosus* B was isolated in cultures is reported by H. S. Bernstein and Ezra S. Fish, Providence, R. I. (*Journal A. M. A.*, Jan. 15, 1916). It is estimated that sixty persons were made seriously ill, four of whom died. The pie was eaten in a restaurant at Westerly, R. I., and the symptoms appeared a few hours after eating it; they were characterized by epigastric pain, burning sensations, extreme thirst, spasmodic contractions in the calves of the leg, green vomitus and stools, diarrhea and tenesmus and high temperature. In two patients there was a herpetic eruption around the mouth and in one a generalized erythema lasting twenty-four hours. In one of the fatal cases there was a suppression of urine. Marked mental depression was a symptom. Convalescence was protracted. Two men and one woman died in four days, another man in three weeks. The chemical examination at the Connecticut Experiment Station revealed no metallic or organic poison. A thorough cultural examination of the samples of the pies and of the blood of the victims revealed the *Paratyphosus* B in the cultures. The origin of the organism could not be determined and a paratyphoid carrier was strongly suggested. The history emphasizes the necessity of protecting public food supplies from disease carriers.

---

## REPORT OF A CASE OF URINARY RETENTION WITHOUT OTHER SYMPTOMS, DUE TO SYPHILIS\*

By T. S. KEYSER, A. B., M. D., Instructor in Nervous Diseases,  
Western Reserve University

It is not uncommon to see patients in a large neurological service in whom a single symptom exists due to syphilis. During a year's experience at the Neurological Institute of New York a number of such cases were observed, four of whom may be described:

A man of 50, who denied infection and otherwise gave a negative history, complained of a severe remittant burning pain of the right cheek of three months' duration. The right side of the nose and a small area of the right cheek were extremely hypersensitive to touch, temperature and pin prick. The pupils were slightly irregular, but reacted normally. There was a very moderate ethmoiditis which was not considered sufficient to cause the symptoms. The serum Wassermann was negative on two occasions. The spinal fluid showed thirty-two cells, moderate globulin content and negative Wassermann. After salvarsan the pain and hyperaesthesia practically disappeared. The spinal fluid showed ten cells, negative globulin and negative Wassermann.

A man of 35 came to the dispensary complaining of paralysis of the right side of the face. He admitted infection five years previously and had received treatment by mouth for several months. A week before coming to the hospital he awoke to find his face paralyzed. The paralysis was of the infranuclear type, involvement of taste indicating the site of the lesion to be in the Fallopian canal. In other words, it was a typical case of Bell's Palsy. The physical status was otherwise entirely negative. The serum Wassermann was positive on two tests, but the spinal fluid quite normal. Two days after an injection of salvarsan the motility of the facial muscles had returned to a large extent. After four injections no asymmetry of the face was perceptible and the Wassermann negative.

A man of 22, who absolutely denied infection, complained of paralysis of the right arm. The evening before he had been drinking and the next morning awoke to find his arm paralyzed. Examination showed a flaccid paralysis of the muscles enervated by the musculo-spiral nerve, otherwise the physical status was

---

\*Read before the Cleveland Academy of Medicine, January 7, 1916.



negative. The serum Wassermann was positive. When told of the possible cause of paralysis the patient declared that he could not possibly have the syphilis and refused confirmatory tests or treatment.

The last case, which was reported before the Neurological Section of the New York Academy of Medicine, was a girl of five and one-half years, who was brought to the dispensary because of paralysis of the left arm and leg. The father had active pulmonary tuberculosis. He denied syphilis and had a negative Wassermann. The mother claimed to be quite well, denied infection, had two other healthy children, and no miscarriages. However, a serum Wassermann done at a later date was positive. Her pupils also were irregular and reacted rather slowly to light. The paralysis of the patient came on gradually during a period of about four days without mental symptoms, pain, or fever. Physical examination showed a complete paralysis of the arm and leg and slight weakness of the face. A thorough examination including a mental status revealed no other evidence to indicate the etiology of the condition. The patient was a robust, well-developed child with no stigmata of congenital syphilis. However, the serum Wassermann was positive on four occasions. The spinal fluid showed 128 cells, mostly lymphocytes, positive globulin and positive Wassermann, and after treatment 55 cells, positive globulin, and positive Wassermann. After salvarsan, mercury, and iodide treatment the paralysis nearly disappeared.

The patient, a woman of 57 years, whom I desire to present, came to the dispensary of the Lakeside Hospital in November, 1915, complaining of difficulty in urination. She was examined in both the gynecological and neurological departments. The family history is unimportant. She always enjoyed good health, but was of a rather nervous, excitable make-up, with the usual history of constipation and vague abdominal sensations—fulness, "heart-burn" and eructations. For twenty years she inhaled small amounts of chloroform nearly every night because of insomnia, which is of the familial psychic type.<sup>1</sup> From text-books on Pharmacology no facts can be ascertained which would warrant the assumption that retention of urine could result from this habit. At the age of 39 a "rectal tumor" was removed. Three years later she was operated on for ovarian cysts. Menstruation was always regular till menopause at 54, when moder-

ate exacerbation of the neurotic symptoms occurred. The history is otherwise negative except insofar as is pertinent to the present illness.

The patient was married at the age of 23, but has had no children or miscarriages. When 30 (?) years old she contracted syphilis from her husband, who at the time had a chancre. Secondary skin eruptions appeared later in both, and the husband at present has cerebral spinal lues. She was given liquid medicine by mouth for several months after infection, but has received no treatment since.

The complaint for which the patient sought relief first made its appearance six years ago, at the age of 51. One day she suddenly felt an intense desire to urinate, but was surprised to discover that she could pass only a few drops of urine. After persisting voluntarily for nearly twenty minutes she was able to urinate in small amounts a considerable quantity. Since the onset, the condition has been constant, varying only in the length of time necessary to apparently empty the bladder. There has been no incontinence or dribbling.

The patient was first examined in the gynecological department. The genitalia showed nothing of note. The external urethral orifice was normal and the urethra easily admitted an 8 cmm. cystoscope, thus excluding the possibility of any obstruction. The urethral mucosa and the base of the trigone appeared to be quite normal. The bladder was dilated and its walls showed a pronounced trabeculation. There was a retention of 100 c.c. of urine and a capacity of 850 c.c. The ureteral orifices were normal in appearance and readily admitted the catheter. The urine was negative in every respect. The serum Wassermann taken at this time was negative, but, as the probable luetic origin was suspected, the patient was referred to the neurological department.

The general physical status revealed nothing except the blood pressure was 165 systolic and 104 diastolic. The pupils were regular, equal, and reacted promptly to light and in accommodation. The fundi were normal. The other cranial nerves showed no involvement. There was no disturbance of the motor functions including tremors. The deep reflexes were all quite lively except the Achilles, which were readily obtained. There was no Babinski, clonus, etc., pointing to involvement of the motor tracts.



The gait was normal and the station secure. Not the slightest evidence of proximal or distal ataxia was obtained. Sensation for touch, temperature, pain, localization and bone-conduction were intact throughout. The patient showed no mental symptoms which would suggest cerebral involvement. The patient was given several provocative injections of mercury and a week later sent into the hospital. The examination as recorded above was corroborated. The serum Wassermann was again negative. The cerebro-spinal fluid showed 14 cells (lymphocytes), negative globulin tests, and positive Wassermann with 0.2 c.c. of fluid. From the definite syphilitic history, the evident neurological basis of the retention, and the findings in the spinal fluid, the conclusion seems warranted that the condition is due to syphilis of the central nervous system in spite of the absence of signs indicative of the condition. One may go as far as to say it is a case of tabes dorsalis. It is well known that a single symptom, *e. g.*, lightning pains, may be present for several years before other symptoms of tabes occur. With special reference to urinary disturbances Osler<sup>2</sup> says that they may "precede the cardinal symptoms of tabes by a number of years so that a clinical diagnosis cannot be made."

This case brings up two questions that seem worthy of discussion—the mechanism of urination and the occurrence of trabeculation. In a recent article on the mechanism of urination, Cecil<sup>3</sup> concludes, after a careful review of the literature, that the enervation of the urinary system is derived from two sources—1st, the autonomic (*nervus erigens*) arising from the 2nd and 3rd sacral segments; 2nd, the sympathetic arising from the 3rd and 5th lumbar segments. According to von Zeissl the autonomic is inhibitory to the sphincters and motor to the bladder, while the sympathetic is just the opposite. In other words, the sympathetic inhibits urination while the autonomic produces it. The internal sphincter, which normally maintains bladder closure, is under voluntary control although it consists of unstriated muscle. From the above conclusions, which, however, are not absolutely proven, retention of urine would result from involvement of the autonomic nerves, resulting in paralysis of the musculature of the bladder but not of the sphincter. The afferent impulses which result in the desire to urinate arise principally in the bladder wall and are stimulated by distention of the bladder and in cases of urgent urination (false incontinence) by relaxa-

tion of the internal sphincter while the external sphincter remains temporarily closed. The course of these sensory impulses is not known exactly. The fact that there is a definite desire to urinate in the case under consideration would indicate that they are associated with the sympathetic fibres rather than the autonomic.

It was rather disconcerting to discover that there was a marked trabeculation of the bladder in this case, without any evidence of obstruction to the outflow of urine. Guiteras<sup>4</sup> defines the condition as follows: "Trabeculosis of the bladder is due to hypertrophy of the musculature, produced by long-continued increased strain due to some condition which interferes with the emptying of the bladder." However, in the present case there is no such obstruction to urination. In the discussion of Doctor Cecil's article, Doctor Krotoszyner<sup>3</sup> states that cases of difficulty of micturition due to cord lesions often show trabeculosis. In Adami's books on pathology<sup>5</sup> it is stated that: "Dilatation of the bladder with hypertrophy of its walls is frequently met with in certain affections of the spinal cord, tabes dorsalis, myelitis, and the like. The only explanation of the hypertrophy is some trophic disturbance of the sympathetic nervous system or of the nerves of the muscular wall."

#### Summary

Account of four cases showing involvement of fifth cranial nerve, of facial nerve, of muscular spinal nerve, and of internal capsule, to illustrate the rather frequent occurrence of monosymptomatic syphilis. Report of a patient, aged 57, complaining of difficulty in urination but showing no clinical signs which would warrant the diagnosis of syphilis. The evident neurological basis of the retention, the definite history of infection, and the serological findings in the spinal fluid determine the condition to be one of tabes dorsalis. Discussion of the nervous mechanism of urination, and of the occurrence of trabeculation of the bladder in cases of disturbance of urination due to cord lesions.

- 
1. Dana: *Text-Book of Nervous Diseases*, 1915, p. 187.
  2. Osler: *Modern Medicine*, Vol. VII, p. 700.
  3. Cecil: *Mechanism of Urination*. *Journal of the Amer. Med. Association*, Vol. LXX, p. 1436 (Oct. 23, 1915).
  4. Guiteras: *Urology*, Vol. I, p. 223.
  5. *Adam's Principles of Pathology*, Vol. XI, p. 826.



## CITY HOSPITAL CARE OF CONTAGIOUS SYPHILIS; SOME SOCIAL ASPECTS

By WM. C. GILL, M. D., Visiting Dermatologist, City Hospital.

In the last few years a new interest has been aroused in syphilis on account of our better knowledge of this disease and of its dangers and complications, and also on account of the greater diffusion of knowledge among the laity as to its contagiousness, and its dangers to the individual and the family. In the past ten years, since the discovery of the *treponema pallida* as the cause of syphilis, our ideas and our treatment have been revolutionized. Recently by the finding of these organisms in the so-called para-syphilitic diseases, it has been demonstrated that these diseases are active syphilitic processes. The Wasserman reaction sounded the death-knell of mouth treatment when it was shown that fully 90% of clinically cured cases gave a positive reaction. Efforts are now being made to prevent the spread of syphilis, and to protect the innocent from infection. People in general are beginning to realize that this is a community disease and that in its wide-spread ramifications it involves all classes of society. It leaves in its trail premature births, excessive infantile mortality, mentally and physically stunted children, prematurely senile adults with defective hearts and arteries, paralyses and mental degenerations. Syphilis far exceeds tuberculosis in its ravages and in the far-reaching burden it puts upon society, for society must pay in one way or another—in its institutions for defectives, its insane hospitals, its charities, etc.

It is more and more understood that syphilis is not necessarily a venereal disease and that a large percentage of infections are acquired innocently. Surely luetic children are not to blame for their condition. Hospitals, as a rule, will not admit these cases in their infectious stage, nor have they provision for their proper care. Thus we find a big majority of these people living in crowded rooming houses and eating in public places with every opportunity to spread the disease.

Contagious cases with neither the means nor the inclination to safeguard the health of others, are a menace to the community and should be quarantined as promptly as any other contagious disease would be.

The Cleveland City Hospital has not been backward in recognizing that contagious syphilis is very properly a disease re-

---

*From the Dermatology Service of the Western Reserve University and of the Cleveland City Hospital.*

quiring hospital care; first, for the protection of the public and secondarily, for the patient's own good, for it is recognized that the sooner treatment is instituted the better it is for the patient. On account of the steady increase of patients applying for admission to the City Hospital, our bed capacity is totally inadequate to care for all. This increase is due, I believe, to the better understanding of the aims of the hospital and perhaps to the care that patients receive. Formerly it was very difficult or impossible to get patients to consent to enter the institution, but we now find them very willing and anxious to enter. The discharged patient and his friends are very prone to spread reports either good or bad, regarding an institution and rightly or wrongly the public will judge a hospital from such reports.

A three-story building, recently vacated as the nurses' home, is being remodeled and made into wards for the treatment of the so-called social diseases. This building will have a capacity of about 150 beds, and will have a separate laboratory in connection. With the early opening of this building the Cleveland City Hospital will be in the vanguard of those institutions which recognize the necessity and do not shun the burden of caring for this class of cases. From the teaching side the advantages to be derived from a hospital clinic and from the taking of careful records cannot be overlooked. Most of our patients at the present time are first seen at the skin dispensary at Lakeside Hospital, and referred to the City Hospital for treatment, while in the contagious stage, and later sent back to Lakeside Hospital Dispensary to continue treatment, as City Hospital maintains no out-patient department.

City Hospital aims to give intensive treatment to patients suffering from acute and contagious forms of syphilis and to keep them in the hospital as long as they are considered contagious. When they are discharged an effort is made, by a follow-up system, to keep track of the patients and see that they continue treatment. A considerable number do so. A great many of these patients, however, return to their former places of abode and at longer or shorter intervals again develop contagious lesions and are again a menace to the community.

In our efforts to force certain cases to take treatment we have been ably supported by the Division of Health, but these cases number but a small percent and it is an economic loss to the hospital when patients return after a lapse of longer or shorter intervals for further treatment.



Cleveland City Hospital has at present only one social worker and she is doing excellent work. But as investigations for the entire hospital are referred to her, she has very little time for any special service. It would seem economical to secure the services of sufficient competent workers who will keep in closer touch with our discharged patients and perhaps by means of home visits and suggestions induce them to continue treatment, for the best results will no doubt occur when patients are made to understand that the treatment is necessary, and for their own good.

In discussing this matter recently with Mr. Wright, superintendent of the City Hospital, the question was brought up whether people with acute syphilis, who refuse treatment, could not be placed under police control and compelled to report at stated times to dispensaries for treatment, the dispensary officials reporting failure to do so to the public authorities, who would compel attendance.

Our routine treatment is the giving of intramuscular injection of  $\frac{1}{4}$  gr. to  $\frac{1}{2}$  gr. of biniodide of mercury daily or every other day, according to the tolerance of the patient, and from two to four or more injections of salvarsan at intervals of one week. Particular care is given to the condition of the mouth. Routinely a saturated solution of potassium chlorate is used as a mouth wash and any mucous patches are touched up with a ten per cent solution of nitrate of silver. Patients are supplied with a soft tooth brush and tooth powder. The evening previous to the giving of salvarsan, patients are given a light supper and a cathartic, and in the morning a light breakfast. Dinner and supper of that day are also light meals, but if any symptoms of nausea are present, no food is given. By this means we believe we have greatly lessened the immediate unpleasant effects of salvarsan. Patients who are not thus treated are more often nauseated and have a rise of temperature. With a few exceptions all salvarsan injections are given intravenously. Patients are kept in bed the day of the injection. Our average dose is  $\frac{4}{10}$  gm. We have noticed that most of our untoward symptoms have occurred when larger doses were given. On a few occasions it has happened that nearly all patients given salvarsan on a certain day had nausea, chills and high fever. All these symptoms subsided in a few hours. In our opinion, most of the symptoms were due to the use of water and salt solution which had not been freshly sterilized.

The total number of cases of syphilis treated on the Dermatological Service during the past 18 months has been 296, which

is all that our limited accommodations care for. They by no means include all the cases of the disease treated at the hospital during this period as a large per cent of the Neurological cases are due to syphilis. Also a great many cases are treated on the Medical Service.

The average number of days' treatment for each case on our service has been 21  $\frac{1}{3}$  days. The average cost per day of a patient at City Hospital is \$1.40, making the total cost to the city for treating these cases \$8,840.53 plus the cost of approximately 900 doses of salvarsan.

We believe that by giving intensive treatment to the cases of acute syphilis, that we will largely prevent or lessen the later manifestations of this disease that enter on the Medical or Neurological Service. These classes of patients become to a large extent permanently incapacitated physically or mentally for active work, and frequently require prolonged or permanent hospital care. The treatment of these late cases involving the nervous system is not satisfactory. The time to cure paresis is in the early stages of syphilis.

It is difficult to make a comparison of the average number of days' treatment with salvarsan and mercury, and with mercury alone, as formerly no great effort was made to give these cases consistent treatment, and the number of days' treatment varies so markedly that no conclusion can be drawn.

From histories taken at random at the City Hospital, we found that formerly the treatment varied from two or three days to as high as 116 days, many cases being in the hospital 50, 60 and 70 days. A recent publication of the Public Health Service gives it as their opinion that by the combined treatment with mercury and salvarsan, the number of days' treatment in the marine hospitals has been cut nearly in half. If this be so, the use of salvarsan, while costly, more than pays for itself in the lessened number of days' treatment required, and its probable effect of reducing the number of later manifestations.

It would be possible to overcome partially the heavy cost of this service, if these patients could be given a certain amount of work to do about the hospital. This would be comparatively easy for the men, who perhaps could care for the lawns and sidewalks, or wash the windows, etc.

As a rule our patients are not necessarily bed patients, and nearly all would be able to do work of this sort and it would be



far preferable to the present method of keeping these people in wards constantly, and no doubt the fresh air would help to overcome the anemia, which they all have.

I believe such a system could be worked out and patients be made to pay for their treatments in some sort of work, when their condition will permit.

A noticeable feature of our cases is the early involvement of the cerebro-spinal system shown by positive Wasserman reactions, positive Noguchi reactions, or increased cell counts on the spinal fluid. Many patients show an increased pressure in the spinal fluid on lumbar puncture, but this may occur in many conditions, so we have not considered it to be symptomatic of syphilis.

In 90 cases where the spinal fluid has been examined, 69 cases showed syphilitic involvement or 76.6%. These patients were all in the early secondary or primary and secondary stages. In one case the cell count was 200, an early papular syphilide.

Fifty-five per cent of the patients are males and 45% females. Another interesting feature from a sociological point of view, is the fact that 40.8% of all the patients were, on admission engaged in handling food—employed in housework, in restaurants, or in candy making, that is, in occupations that offer the best chance for spreading infection.

In three cases we tried the intravenous injection of the bichlorid of mercury, 1/6 gr. In one of them a slight thrombus developed in the vein. In the second case red cells appeared in the urine after the third injection; while in the third case it was discontinued as we could see no advantage over the intramuscular method.

I wish to extend my thanks to my colleague, Dr. Cole, for the Wasserman reactions made on these cases and to the House Staff of the City Hospital for the routine laboratory work, and for the interest they have taken in the service.

---

## THE VALUE OF DIASTOLIC BLOOD MEASUREMENT IN DIAGNOSIS OF CIRCULATORY DISTURBANCES\*

By D. O. BOWMAN, Cleveland

Until within the past two or three years the diastolic blood pressure was considered of no importance. Cabot in his 1912 edition says "Very little value of diagnostic or prognostic value attaches to it in my experience." But very recent observers have found it to be of great value in clinical work. However before entering upon a discussion of its value in the diagnosis of circulatory disturbances, it would seem advisable to refresh our memories by briefly stating a few points concerning it.

First, what is diastolic blood pressure? With each ventricular systole waves of pressure are thrown into the aorta and these continue on into the arteries. The highest pressure attained in this stream of blood is known as the systolic pressure. But part of this energy expended by the heart becomes potential energy, stored up as it were in the distended, elastic arteries, and when the high pressure has passed, these distended walls tend to return to their normal size and thus exert a constant pressure on the blood within the vessel. This constant pressure represents the diastolic pressure, and may be defined as "the lowest pressure occurring between the heart beats." The difference between the systolic and diastolic pressures is termed the pulse pressure. Each of these pressures is given in terms of the height in millimeters of a column of mercury; systolic being about 115mm, diastolic about 80mm, and pulse pressure about 35 or 40mm.

Secondly, its maintainance. Diastolic blood pressure is maintained by and depends upon the elasticity of the vessel walls plus peripheral resistance.

Thirdly, its measurement. There are two methods used, the auscultatory and the oscillatory. In both cases a cuff about twelve centimeters in width and which can be inflated is placed around the arm or leg, and the measurement depends upon certain changes occurring when the pressure in the cuff is equal to the diastolic pressure. The change in the auscultatory method is in the sound below the cuff detected by a stethoscope,

---

\*Paper read in Physiology Symposium, Western Reserve Medical School, December, 1915.



while in the oscillatory the change is in the pulsations of the manometer connected with the cuff. The auscultatory method is by far the more valuable of the two.

Regarding the VALUE of distolic blood measurement in the diagnosis of circulatory disturbances: In the first place its measurement serves as an index to the load which the vessels and the aortic valves must constantly bear. Throughout diastole of the left ventricle these valves must stand guard and support this diastolic pressure or else blood will flow back and the circulation be diminished. The measurement of the diastolic blood pressure accurately records this pressure or load which the vessels and valves must bear.

In the second place and viewed from the standpoint of the heart we readily see that this same load upon the aortic valves, due to diastolic pressure and coming from the arterial side, must be overcome on the other side at the beginning of each ventricular systole before the valves can be forced open and blood thrown into the circulation. This means work for the heart, and here again the measurement of the diastolic pressure gives us an estimate of the load which it must lift before any blood leaves the heart.

Now what is the value in the diagnosis of circulatory disturbances of knowing these things? From the viewpoint of the vessel walls and valves suppose we had a high systolic pressure with a normal diastolic, what would it mean? Would it mean excessive strain for the vessel walls, valves and heart? Probably so, but the systolic pressure is transient and following each wave there is rest. Now suppose we had a high diastolic pressure in the above condition. What would *it* mean—excessive weight on the arterial walls and valves, and on top of this no rest, for the diastolic, is a constant pressure; also there would be an abnormally heavy load for the heart to raise before the aortic valves are forced. Hypertrophy of heart walls, degeneration of the arterial walls, and what not may occur?

So far I have discussed diastolic pressure and measurement from the standpoint of the heart, the valves, and the main arteries. In the third place let us view it from the side of the capillaries and arterioles with their tonicity, i. e., peripheral resistance. Diastolic blood pressure gives us valuable information in regard to peripheral resistance. Dr. Warfield of Milwaukee says it "measures peripheral resistance." Dr. Macleod speaks

of it as helping to "gauge peripheral resistance." Let me cite three cases that illustrate typical conditions of peripheral resistance and their relations to diastolic blood pressure.

In the first condition suppose we had a case of hypertonicity, or sometimes called hypertension. Here we find fairly healthy arteries much constricted. This increases blood pressure, and accordingly systolic blood pressure. If the arterial walls are healthy this will also increase the diastolic pressure for the greater the force required to dilate the arteries the greater will be the potential energy stored up. Here we have a high systolic with a high diastolic. What does it mean? Evidently it means greater strain on the vessel walls and the valves, and increased work for the heart. Remember this is a constant pressure in the sense that it is the pressure in the arteries between the heart beats, and, on the vessel walls especially, entails a greater strain than the transient systolic. It "should be taken as a danger signal of possible rupture." I think it safe at least to draw a general conclusion in such cases that the greater the strain the more subject these organs are to degeneration.

The second case is that of arteriosclerosis of the Gull and Sutton type, by which I mean a condition in which the smaller arteries and arterioles are affected. The walls are stiffened and less potential energy is stored up and correspondingly the lower is the diastolic pressure (if they were perfectly rigid the diastolic pressure would be zero). To maintain the circulation the heart is called upon for more rapid pulse or greater force, possibly both. This is a case of high systolic and low diastolic pressure. The result is a less constant pressure but an enormously increased pulse pressure and cardiac activity which eventually means hypertrophy and degeneration of the heart along with that of the arteries.

The third condition is that of hypotonicity. Here the tonicity of the vessel walls is lowered. Accordingly we have a relaxed periphery and a correspondingly lowered diastolic blood pressure. The blood is forced into the vessels but the vessels fail to contract down upon their volume, i. e., the diastolic pressure is not present to give the constant pressure necessary to squeeze the blood through the capillary system and furnish food to the tissues and organs. Such cases may occur in toxic paralysis of the vasomotor center and in general cardiac weakness. The heart is possibly called upon to offset the evil.



In connection with these cases it might be well to give a quotation from Dr. Macleod's article in a recent journal.\* In referring to allied conditions, he says "In using the diastolic pressure, however, it must be remembered that the heart rate also affects it, a slow heart making it fall and a quick heart making it rise. It is therefore possible to have a normal diastolic pressure, either with a low peripheral resistance and a quick pulse, or with a high peripheral resistance and a slow pulse. In these cases the arterial walls may be perfectly healthy."

So, in the fourth place, the measurement of the diastolic finds its greatest value, I think, by the help it gives in diagnosing the conditions of the circulation through its relation to the systolic and pulse pressures. It is of extremely great value in itself alone, but we can recall from the instances used above that it finds an added value in its relation with the others.

---

\*The Journal of Laboratory and Clinical Medicine, Vol. I, No. 1, 1915,

---

**Opium Derivatives.**—H. K. Pancoast and A. H. Hopkins, Philadelphia (*Journal A. M. A.*, Dec. 25, 1915), give the results of an investigation made on the effects of opium on the derivatives on the gastro-intestinal tract of man. After briefly noticing earlier works by German observers in testing these effects by means of the Roentgen ray, they describe their own results from the careful examination of twelve persons, including one case previously reported and one of a heroin habitué. These results are summed up by the authors as follows: "The Roentgen examination is a valuable method of studying certain phases of drug effects on the gastro-intestinal tract, especially motility, and the knowledge it furnishes can be gained better by this method than by any other. Our observations were made in a series of eleven cases given morphin and one heroin habitué. While we have been able to duplicate the phenomena observed by others, with one exception, there was a decided lack of uniformity in the effects produced in different individuals, in connection with both stomach and bowel. There is no distinct uniformity in connection with dosage. Small doses in some may produce more marked effects than much larger doses in others. Females appear to be more susceptible. In the stomach a rather high spasmodic hour-glass contraction is observed rarely, but we have not seen this near the pylorus as described by others: In some instances the stomach may show no appreciable change from normal. In most cases there is more or less pyloric spasm, increased peristalsis and a decided prolongation of the emptying time. In the small intestine, morphin causes decreased motility almost uniformly, apparently as a result of a lack of propulsion and not of spasm. When marked, it is most noticeable in the upper small bowel. The effect on the large bowel is very variable and probably of little consequence. Oral administration produces practically the same effect as subcutaneous injections."

---

## NEUROLOGICAL REVIEWS AND CASE REPORTED

By T. S. KEYSER, M. D., Cleveland

*The Clinical Aspects of Syphilis of the Nervous System in the Light of the Wassermann Reaction and Treatment with Neosalvarsan. Head and Fearnside. Brain—Vol. XXXVII, Part I, p. 1.*

This extensive article is, without doubt, the most authoritative and comprehensive work on syphilis of the nervous system that has yet been published. The conclusions quoted below are most valuable, especially in regard to the prognosis:

The more closely clinical signs and symptoms point to the pathological changes in the meninges and vessels, the more certain will the disease yield to adequate treatment. On the other hand, the more nearly the clinical manifestations point to one or more foci of syphilitic activity within the parenchymatous tissues of the central nervous system, the less will they yield to the present methods of anti-syphilitic treatment.

In syphilis meningo-vascularis the character of the Wassermann reaction in the cerebro-spinal fluid depends upon whether the spinal or basal meninges are affected. Should clinical evidence point to affection of the contents of the spinal canal, and occasionally when the basal meninges alone appear to be affected, the reaction is positive in the cerebro-spinal fluid. When, however, the disease seems to be limited to the intracranial contents, the reaction in the cerebro-spinal fluid tends to be negative or weakly positive.

In cases of syphilis centralis, such as dementia paralytica, tabes dorsalis, muscular atrophy and primary optic atrophy, the Wassermann reaction in the cerebro-spinal fluid is strongly positive so long as the disease is active. When, however, it has come to an end, leaving behind it a greater or less amount of irreparable degeneration, the Wassermann reaction may diminish in strength or even become negative in the cerebro-spinal fluid.

Under treatment with salvarsan or neosalvarsan, the Wassermann reaction in cases of meningo-vascular syphilis, if at first positive, will usually become negative in the cerebro-spinal fluid within six months. On the other hand, the more clinical manifestations point to syphilis centralis the less well they yield to any of the present forms of anti-syphilitic treatment.



Whatever the situation and nature of the lesion which is responsible for the clinical manifestations, some secondary degeneration must almost certainly result. Many of the signs and symptoms in cases of syphilitic disease of the central nervous system are therefore not amenable to any form of anti-syphilitic treatment. It is, therefore, most important to make the diagnosis of syphilis early in disease of the central nervous system, so that treatment may be employed before the advent of these secondary changes. Among these early symptoms are changes in personality and aptitude, insomnia, headache, shivering attacks, neuralgic pains and muscular weakness and wasting of radicular origin, abnormality of reaction and appearance of pupils, and urinary disturbances. It is quite evident that none of these symptoms, except the pupillary changes, are at all pathognomonic of syphilis of the central nervous system, and yet it is at this stage of the disease, before more definite symptoms develop, that the possibility of recovery is most probable.

There is but one feature in regard to syphilis centralis which is not discussed in the article, which seems to be of considerable importance: Will vigorous treatment prevent the further progress of the disease? This question is especially important in tabetics. It is my opinion that continued systematic treatment does frequently have this result. A tabetic who has been under salvarsan and mercury treatment for the past four years may be cited. When first seen, four years ago, he showed most marked ataxia, which had developed acutely. Several salvarsan injections resulted in almost complete relief of this symptom, which therefore was of meningo-vascular rather than of central origin. However, the Wassermann reaction, which was done repeatedly on the blood and spinal fluid, was always strongly positive, thus showing that there are syphilitic foci in the parenchyma of either brain or cord. The important fact, however, is that the patient so far has shown no return of ataxia or development of other symptoms; in fact, he is able to attend to his business as well as before the illness began.

---

*Sexual Hypochondria and Morbid Scrupulousness. Magnus Hirschfeld. The American Journal of Urology and Sexology, Vol. XI, p. 485, 1915.*

The various forms of sexual neurosis with illustrative cases are clearly described. In the milder forms the all-important fac-

tor of a wrong conception of the harm that will result from both normal and abnormal sexual acts is emphasized. The sources of these misconceptions are often the result of reading mountebank pamphlets or of falling under the influence of "specialists." Medical books, not so many years ago, were often dominated by such superstitions, while in the Talmud the statement is made: "If anyone indulges in self-defilement his brain will dry up so that it will be heard rattling in his skull."

A second feature which is not dwelt on in this article, but which, in my opinion, is essential as a factor in the development of sexual neurosis, is a conflict between the erotic impulse or instinct and the moral standards of the patient. In an article on the dynamic theory of dementia praecox, Doctor Adolph Meyer emphasizes the importance of this "conflict." At least a proportion of the cases of dementia praecox clearly show such a conflict between the instinctive and emotional spheres. As is being shown by recent observations, there is a metabolic (glandular?) disturbance in the patients who develop dementia which is not present in the neurosis. A young man of 18, who was seen lately, showed both these features. He was rather resistive, greatly distressed, had attempted suicide, appeared rather dazed, and talked only when greatly urged. He frequently would look at himself closely in the mirror and say: "Is that me? It must be, but I've changed so." After much questioning he blushing and with great agony spoke of repeated onanism since the age of 8 years. His description of very frequent conflict between the impulse and his horror and fear of the consequences, resulting finally in a suicidal attempt, left no doubt in regard to this feature of the case. The first stages of the dissociation of the mind or schizophrenia of dementia praecox described by Bleuler was clearly shown by the patient suddenly accusing the doctor of "pulling him off." The disturbance of the glandular system was indicated by feminine somatic and mental characteristics.

From his experience with the neurosis, Doctor Hirschfeld says that the outlook in a large number of such patients is not unfavorable.

In the treatment the importance of medicinal, dietetic, and physical methods are emphasized. However, such measures alone, as many patients know quite well from repeated experiences, very rarely have any real influence on the malady. The only method of obtaining definite improvement is by psycho-



therapy which necessitates as complete a knowledge of the patient's difficulties as can be obtained, and a painstaking course of re-education by which a satisfactory understanding of the forces at work in the emotional, moral, and instinctive life, and a normal interest in work, etc., is obtained. Such treatment requires infinite patience, tact, and a sound knowledge of psychology on the part of the physician and unbounded confidence and sincerity on the part of the patient.

---

*Familial Syphilis.* P. C. Jeans. *Amer. Journ. of Dis. of Children*, Vol. II, No. 1, p. 11.

A report of 100 families, in which congenital syphilis occurred, is made. The Wassermann was positive in 86 per cent of the mothers, in all but two of whom syphilis was clinically latent. The percentage is somewhat higher than that usually obtained in a series of latent luetic cases. Of the patients with negative Wassermans all but six gave evidence in the past history indicating probable infection. Of these six cases, five were examined at least ten years after the syphilitic child was born. Colles' law, that a syphilitic child never causes primary lesions of the mother is true, but not because she is immune, but because she already has the disease.

Warthin states that in his autopsy material on males there were active lesions in the testis in all cases of latent syphilis. This would explain how an apparently healthy father could infect his wife.

In the 100 families there were 331 pregnancies, of which 30.2 per cent were abortions, 9.3 per cent still-births, and 60.4 per cent living births. Of the latter (200 children) 38 died in infancy and 4 later. The remaining 161 were examined and 128 showed evidence of syphilis, leaving only 33 of the 331 pregnancies who were apparently healthy.

---

*Tardy or Late Paralysis of the Ulnar Nerve.* J. Ramsey Hunt. *Journal of the American Medical Association*, January 1, '16, p. 11.

This important contribution describes the occurrence of ulnar paralysis following fracture or dislocation of the elbow. A report of three cases is given. The first, a man aged 45, had a fracture of the elbow at the age of 5. Thirty-six years later

ulnar neuritis slowly developed, characterized by pain, paraesthesias, paralysis, atrophy, and disturbance of epicritic sensation limited to the distribution of the ulnar nerve. The other two cases were similar in history and physical status.

Such ulnar paralysis is a definite clinical entity due to chronic localized interstitial neuritis, subsequent to old injuries about the elbow. The interval of time between the injury and onset of symptoms may vary from six to forty years, with no symptoms whatever during the intervening period, other than those due to the injury itself—deformity and limitation of movement. The most common form of fracture, followed by the neuritic symptoms, is that of the external condyle with decubitus valgus and alternations in the configuration of the ulnar groove. The neuritic symptoms are insidious in onset usually without any definable immediate cause. The sensory changes are those characteristic of peripheral palsies. The sensory changes may be absent in the earlier stages and later involve only the epicritic sensation. This latter point is especially important, as loss of epicritic sensation alone, according to Head and Sherren, occur only in lesions of peripheral nerves. It also illustrates the fact that the motor nerve-fibres are much more readily affected in neuritis than the sensory fibres. In the differential diagnosis the progressive muscular atrophies and hypothenar type of neural muscular atrophy must be considered. Surgical treatment is usually necessary to restore function in these cases.

---

**Illuminating Gas Poisoning.**—W. H. Burmeister, Chicago, (*Journal A. M. A.*, Jan. 15, 1916), after remarking on the methods of combating illuminating gas poisoning by transfusion of blood, reports experiments on animals with the use of artificially preserved erythrocytes. Rabbits and dogs were employed and the blood corpuscles were preserved in sterile Ringer's solution added to the blood citrate mixture. He found that the red cells of some animals can be preserved for a considerable time, those used in the transfusion having been kept from three to seventeen days. They can again assume their physiologic function in another animal of the same species and successfully prevent death in carbon monoxid asphyxiation of this second animal in about 75 per cent of all cases in which indirect transfusion is begun while cardiac contractions can still be elicited. In his opinion the establishment of an emergency station where human erythrocytes can be obtained, just as pulmotor stations are maintained, would be of invaluable service in saving life from gas poisoning.

---



# The Cleveland Medical Journal

CONTINUING THE CLEVELAND MEDICAL GAZETTE and  
THE CLEVELAND JOURNAL OF MEDICINE

MONTHLY

THE OFFICIAL ORGAN OF THE ACADEMY OF MEDICINE OF CLEVELAND

Entered March 7, 1902, as Second-Class Matter, Post-Office at Cleveland, Ohio, under  
Act of Congress of March 3, 1879.

Organized January 20, 1902.

Capital Stock, \$6,000

ACTING EDITOR AND BUSINESS MANAGER—MISS RUTH F. STONE

2318 PROSPECT AVENUE

ASSOCIATE EDITORS

JOHN B. MCGEE, M. D.  
ROGER G. PERKINS, M. D.

JOHN PHILLIPS, M. B.  
T. WINGATE TODD, F. R. C. S.

COLLABORATORS

C. E. FORD, M. D.  
H. E. HANDERSON, M. D.  
S. W. KELLY, M. D.  
J. J. R. MACLEOD, M. D.

DAVID MARINE, M. D.  
V. C. ROWLAND, M. D.  
H. L. SANFORD, M. D.  
TORALD SOLLMANN, M. D.

G. N. STEWART, M. D.

EXECUTIVE COMMITTEE

*President*, JOHN P. SAWYER, M. D.  
*Vice-President*, C. E. BRIGGS, M. D.

*Secretary*, C. A. HAMANN, M. D.  
*Treasurer*, H. G. SHERMAN, M. D.

BOARD OF DIRECTORS

C. E. BRIGGS, M. D.  
F. E. BUNTS, M. D.  
G. W. CRILE, M. D.

C. A. HAMANN, M. D.  
C. F. HOOVER, M. D.  
S. H. LARGE, M. D.  
J. B. MCGEE, M. D.

J. P. SAWYER, M. D.  
H. G. SHERMAN, M. D.  
W. H. WEIR, M. D.

Reprints of articles will be furnished authors at a reasonable price.

All remittances to the Journal should be made payable to The Cleveland Medical Journal.

Short notes upon clinical experiences or reports of interesting cases will be welcomed by the editors.

Original articles are accepted for publication by this Journal only with the distinct understanding that they are contributed solely to this Journal and will not be published elsewhere as original.

---

## EDITORIAL

### A RÉSUMÉ OF THE HISTORY OF THE ORIGIN OF MEDICAL INSPECTION IN OUR SCHOOLS

An article in the *Journal* of November on Medical Inspection of School Children, by the Chief Medical Supervisor, Doctor E. A. Peterson, suggests some omissions in the recent report of the Cleveland Education Survey, entitled "Health Work in the Public Schools," by Doctor Leonard P. Ayers and Miss May

Ayers, which in justice to the Committee on Municipal Sanitation of the Chamber of Commerce brought forth a communication from the Secretary of the Chamber, Munson A. Havens, to the author of the report, a portion of which we quote:

"DEAR DOCTOR AYERS: I think I should be somewhat less than just to the Chamber of Commerce, and particularly to the gentlemen who composed its Committee on Municipal Sanitation, if I passed without comment your report on "Health Work in the Public Schools." The Medical Inspection System referred to in your report as "unsurpassed by any in the country" was installed as the result of more than a year of painstaking investigation and effort on the part of the committee of this Chamber named above. The committee not only studied the work as it was carried on all over the world, it not only prepared the plan, it not only convinced the members of the Board of Education, the School Superintendent and the School Director of the necessity of installing such a plan, but finally its Chairman, Doctor H. G. Sherman, at no little sacrifice to himself, both personally and professionally, undertook the actual direction of the work during the critical years of installation.

"There would be no occasion to refer to these services if your report treated merely with *facts as they are*, but since pages 18-20 are devoted to the subject "How the Work Started," it seems to me that the report fails to make the glorious acknowledgment of public service privately rendered which should have been made."

We also quote from the report of Doctor Ayers, in reply to this attack:

"DEAR MR. HAVENS: In this case we made a careful attempt to get at the early documents. We interviewed the pioneers in the movement. After our report was in typewritten form, we submitted it to our committees, to the Board of Education, to our Committee on Health Work, and to the school authorities who are carrying on the medical inspection work. We received no suggestion from any one of these sources that we had omitted due credit to anyone who should have it."

I fail to comprehend the meaning of the above quoted words from the reply of Doctor Ayers, to whom I attribute a desire to present the truth without prejudice in the presence of documentary evidence in his possession. I state this on the assertion of a member of the Advisory Committee of the Cleveland Foundation, who assures me that the facts pertaining to the origin and establishment of Medical Inspection, as set forth in the report of the Medical Supervisor to Director Orr, were placed at his disposal and were so acknowledged by him.



As Chairman of the Municipal Committee, composed of a very representative personnel (the late Edward F. Cushing, M. D.; William T. Howard, M. D., John H. Lowman, M. D.; Perry W. Harvey, Clinton C. Young, Howard Strong, Secretary; H. G. Sherman, M. D., Chairman *ex officio*), I beg to present for the enlightenment of Doctor Ayers (and whomsoever may be interested), who states on pages 18 and 20 in his report, "How the Work Began," and Doctor Peterson, who makes no correction in his article of November in the *Journal*, a few historical facts (notwithstanding his graceful allusion, over his signature, to the man who organized what is called in this report "A Medical Inspection System," "Unsurpassed by any in the country," in a complimentary report on "Health in the Public Schools" sent the writer).

In January, 1909, the Chairman of the Sanitation committee of the Chamber of Commerce introduced a resolution recommending "the necessity of a comprehensive medical inspection in our schools, based upon the recognition of the dependent relation between the physical, mental and moral well-being of the child and the whole process of education."

This resolution was unanimously adopted and a sub-committee of five prepared plans, after investigating systems already inaugurated in other cities in this country and abroad, and, after many conferences with the President of the Board of Education, Mr. Frank H. Haserot; the Superintendent of Education, Mr. Elson; the Director of Schools, Mr. Charles Orr; the Commissioner of Health, Mr. Cadwallader, and others.

These plans, which are now being carried out in our public schools, with a few essential exceptions, which I shall not now comment upon, were accepted by the Chamber of Commerce as a whole, presented to the Board of Education, and adopted by the Board, December 13th, 1909.

It is pertinent to recall that previous to this date Medical Inspection of Schools comprised only a general supervision of school children and school buildings, with the view of detecting and minimizing the danger of exposure to communicable diseases. *This work was installed upon the recommendation of the Sanitation Committee of the Chamber of Commerce and was conducted by the Health Department in accordance with provisions of the City's Sanitary Code, prepared by the Sanitation Committee of the Chamber, accepted without change by the City*

*Council*, charging Ward Physicians with keeping an oversight, etc., of public school children with regard to contagious diseases. Through the efforts of *the Sanitation Committee to demonstrate the practicability and desirability of this work* a number of dispensaries were established in different centers of the city, in the public schools, by the order of *Director Orr* (without reference to the Board of Education), whose intelligent and sympathetic appreciation of the value of this work *was elicited* through many conferences with this *committee*. These dispensaries were conducted by various district physicians, without extra compensation, under the supervision of the Board of Health, and the result of the work was such as to deeply impress the Board of Education of its value, which was later, in its present form, inaugurated by the Board.

In 1909 the Committee on Sanitation of the Chamber of Commerce, at the urgent request of the Chamber, secured the passage of the bill in the Legislature, empowering Boards of Education with or without co-operation of Boards of Health, to provide for Medical and Sanitary Supervision of Schools.

Immediately after the passage of this bill, the Board of Education put into practical operation the *plan developed by the Chamber*.

Disclaiming any personal consideration, other than that due as a member of the Sanitation Committee, and recognizing the untiring efforts of the Secretary, Howard Strong, second Secretary of the Chamber, who gathered and put into shape the data so carefully considered by the sub-committee, I assert that *the Chamber of Commerce is wholly responsible for the conception and execution of the Medical Inspection inaugurated in our schools in 1909* (also previous to this date), and has been so recognized by more than 60 eminent educators throughout the United States, whose expressions of appreciation is a matter of record, and I protest that those responsible for any adequate survey in failing to recognize this were either *misinformed* or *wilfully disregarding* of data in the form of printed reports acknowledged to be in their hands.

H. G. S.

---



## DEPARTMENT OF THERAPEUTICS

Conducted by J. B. MCGEE, M. D., Cleveland

**Mitral Stenosis:** A Graham Stewart, in the *Practitioner* for December 15th, believes that the treatment of mitral stenosis practically resolves itself into either (a) restoring compensation when this is broken down, (b) regulating auricular fibrillation, (c) or treating both conditions when they are present together. The treatment of one is practically the treatment of the other, and for all practical purposes digitalis is the only drug one need consider. The most reliable preparation is the tincture. In every case this ought to be standardized. Personally he prefers P. D. & Co.'s standardized tincture. In fibrillation with more or less cardiac failure, 15 minims should be given every six hours, day and night, until either the pulse comes down to the region of 70, or distinct nausea, headache or retching supervene. It may be given every four hours, or 20 minims or even 30 minims may be given every six hours. The ideal to be attained is to get a clear digitalis reaction. When this is obtained, which is evidenced by the pulse dropping from 64 to 70, the drug should be immediately withdrawn. When the pulse begins to rise again, the same doses should be employed, but fewer of them. Moreover, an endeavor should be made to strike the requisite amount of digitalis necessary to keep the ventricle rate in the region of 70. His usual practice, having once obtained a strong digitalis reaction with the tincture, is to prescribe one granule of 1/240 grain of Nativelle's digitalin every 12 to 24 hours, when the pulse begins to rise to the region of 80 or 90 beats per minute. These granules are easily taken; they are potent and constant in action. One may have to be taken daily or one or two for three or more days. The patient soon learns how many are required to keep the heart in its most efficient working condition. If the condition is very acute, a rapid reaction may be obtained by giving 1/200 of a grain of strophanthin intravenously. This quite often reduces a ventricular frequency from 130 or more to 72 or so within ten minutes. It may be repeated in one or two days, or may be followed by digitalis. Coupled beats are a sign that the digitalis has been carried to the limit of safety. A sense of constriction around the chest, and the inclination to draw occasional long breath are also signs that the administration is being pushed far enough. If the blood pressure is very low, and the general state poor, an ampoule of 1 c.c. of pituitrin may be injected with the strophanthin; five minims of liq. strychnin by the mouth, or better still 1/64 to 1/20 gr. of strychnin hypo. every 4 to 6 hours are useful adjuncts, for strychnin stimulates also the respiratory center, so helping to relieve the breathing. Restless nights and difficult respiration are best relieved by hypodermatics of 1/24 to 1/6 grain of morphin with 1/240 to 1/150 grain of atropin sulphate. Digitalis will almost invariably increase the diminished urinary flow; if not, 10 grains of sodium and the bromine salicylate every 4 hours often acts like a charm. Theocin sodium acetate, 3 grains 3 times a day, is often of value.

**Fecal Stasis.** In the *Therapeutic Gazette* for December, F. H. Johanneke rather prefers the term "fecal stasis" to "intestinal stasis," as being more scientifically and technically exact. The hypothesis that fecal stasis permits inordinate absorption of toxic or poisonous products from feces delayed in transit, with consequent production of multitudinous deleterious effects upon the human organism, is merely a revival of the autointoxication theory of Bouchard, Combe, *et al.*, many years ago. These ideas, however, when submitted to the test of clinical experience, were found intangible and not entitled to unqualified acceptance. While it is the general belief that at least one daily alopecine evacuation is necessary for the promotion of normal physical and mental equilibrium, this rule is subject to wide variation. The im-

mediate and remote effects of simple fecal stasis may or may not be serious. It is believed few physicians will be found in this part of the world who accept as correct the teachings of Mr. Lane. One valuable suggestion, however, may be found in his writings, viz., wherein he refers to the employment of purified mineral oil for lubricating the intestinal mucosa. The treatment of fecal stasis, where the essential cause cannot be determined, is purely empirical. When fecal stasis is observed as a purely functional disorder, and this class includes the vast majority of cases, regulation of dietary errors and individual habits, establishing a regular period for defecation, the occasional use of enemata, the practice of abdominal massage, the taking of abundant physical exercise, and the ingestion of plenty of pure water between meals and at bedtime, are important items in rational treatment. In fecal stasis due to any cause the self-administration of purgatives should be discouraged. The "enema habit" upon the part of patients is also to be deprecated; much harm has probably been done by rectal and colonic douching in ignorant hands. He concludes: (1) In the majority of instances fecal stasis is a purely functional disorder which is amenable to proper medicinal hygienic and dietetic treatment. (2) In fecal stasis from local, organic and mechanical lesions, surgical treatment must be considered. (3) Radical operative intervention, according to the methods of Mr. Lane (colonic exclusion and colectomy), is never justifiable in the treatment of simple fecal stasis, or the presumed results of auto-intoxication. (4) It would appear the height of absurdity to expect a cure of joint tuberculosis, mammary cancer, gout, rheumatoid arthritis, goitre, etc., by colonic exclusion or colectomy. (5) By virtue of its mechanical action in lubricating the intestinal mucosa, the internal use of liquid paraffin constitutes an effective method of treating fecal stasis. (6) The treatment of fecal stasis by purgative drugs, especially when self-administered, and also rectal and colonic irrigation by patients, should be discouraged.

---

**Drug Therapy:** The *Medical Record* for November 6th, 1915, calls attention in its editorial columns to the rehabilitation of drug therapy. It is not so very long ago that everything was swinging over in favor of therapeutic nihilism, insofar as drug therapy is concerned. The success of diphtheria antitoxin prepared the imagination for belief in a new system of serotherapy for the infectious diseases, and while it did seem for a time that everything was swinging that way, it must not be forgotten that there were workers at the old problem started by Lister of trying to find a chemical compound that would destroy infective germs and not injure the tissues. We have not as yet a chemical compound that we can inject into the circulation which will not do more or less damage to the vascular system. We have made great progress in arsenotherapy, but we are not yet at the end of our work in chemotherapy; and on the other hand, in chemotherapy no less than in serotherapy, there are not grounds for thinking that all progress in the future therapy of infectious diseases is going to be in its direction. Moore, by injecting a hydroquinone derivative and antipneumococcus serum into mice, infected with pneumococcus, found that the efficacy of the serum was increased at least fifty times; that the effect was many times greater than a simple summation of the effects of the drug and the serum. This word drug is rarely used in the ultra-scientific literature these days, but nevertheless much of the research has to do with drugs. It is in researches such as these that we can see that therapeutic nihilism is going to belong to the past. In the field of specific therapy, quinine long ago justified fully drug therapy; thyroid, organo-therapy; diphtheria antitoxin has fully justified serum-therapy; all of these remedies are biological products. If we may judge of the future by these achievements, we should expect continued progress along any line in therapy which does not forget that the life processes of a plant or an animal excel in the production of delicate chemical compounds for specific purposes.



**Thyroid Disease:** In the *New York Medical Journal* for December 25, 1915, Silas F. Beebe and J. Wallace Beveridge state that the treatment of exophthalmic goitre has been the source of much argument. The surgeon contends that in the majority of cases operative measures are the only certain means by which the disease can be controlled or cured. Some surgeons take a more moderate view. For instance, C. Mayo has stated that while an exophthalmic goitre was amenable to surgical treatment by the removal of a large part of the hypersecreting gland, this procedure should be considered emergency surgery. During exacerbations all cases should be considered medical; surgery is indicated during the upward wave of improvement. Medical means then may be considered as of quite equal importance in the treatment of hyperthyroidism with surgical means. In the first instance it may be stated with emphasis that in the disorders of the thyroid associated with the age of puberty in girls, steps can be taken and should be taken whenever possible to allay the mental and physical conditions which accompany this period. If rest is prescribed and every effort made to keep the mind in a state of calm, the symptoms will almost invariably pass away and health be fully restored. If, on the other hand, either through the force of circumstances or through neglect, no notice is taken of the red flag of danger, the functional symptoms may develop into true disease. When thyroid function is impaired in girls, the ovaries develop late. Menstruation is late and sometimes assumes the form of menorrhagia. The uterus is small and infantile. The higher the degree of thyroid inadequacy the greater is the menstrual loss. When menorrhagia is due to thyroid insufficiency, the best themostatic is undoubtedly thyroid extract. Again, many cases of true exophthalmic goitre do not present the classical symptoms, and in such cases the heart should be examined carefully, for cardiovascular disturbances occur early and a subject suffering from exophthalmic goitre is never free from such disturbances. As to Beebe's serum treatment, the purpose of the treatment is to prepare in an alien species of animals a serum having special properties antagonistic to the human thyroid secretion. The injection of this serum into a patient having exophthalmic goitre provides a ready-made antagonist to a complete toxic substance circulating in his blood. Experiments have proved the principles of treatment to be correct, and experiments in the direction of evidence that the serum is specific have been highly convincing. Theoretically it would seem that the serum is largely antitoxic, and not cytolytic. It can be used in many cases in lieu of surgical treatment and can also be employed with good effect before and after operation. As a medical treatment it is effective and in addition it is a valuable adjuvant to operative measures. Clinical results have thoroughly justified its use. It is stated that fifty per cent of patients out of more than 3,000 treated have been cured in the sense that they are strong and able to meet all the demands made upon them. The serum has now been before the profession sufficiently long for its members to know all concerning it, and to judge it on its merits.

---

**Emetin Hydrochloride:** In the November number of the *Medical Council*, E. P. Stewart via *Jour. Amer. Pharm. Assoc.*, used emetin in hemoptysis, using the same technic as for dysentery, injecting into the thigh 1 c.c. of distilled water containing 0.04 mg. (about  $\frac{5}{8}$  gr.) of the salt. The result was surprising, the hemorrhage stopping immediately. In about twenty cases the hemoptysis was regularly arrested after this treatment and with the exception of one case of tuberculosis the tendency to pulmonary hemorrhage seemed definitely arrested. However, in the more threatening cases he repeated the injection twelve hours later, and once on the following day, and if necessary on the fourth and fifth days. The injection causes temporary pain only in the most sensitive individuals. No disagreeable sensation was experienced. No palpitation, dizziness or nausea. The effect was not due

to a lowering of blood pressure, for the author's sphygmomanometric measurements showed the pressure to remain the same; nor could he detect any effect on the coagulability of the blood, or the number of red cells, leucocytes and platelets. The measure seems to be entirely harmless, and succeeded when all others had failed. As the hypodermic method is not always convenient in practice, Rogers has tried giving  $\frac{1}{3}$  grain of emetin hydrochloride in tablets by mouth, on an empty stomach, and finds that  $\frac{2}{3}$  grain can generally be taken without producing any material sickness and with much more favorable results than with ipecac by the mouth. However, the action is slower and less effective than by the hypodermic method. Can emetin hydrochloride be safely injected intravenously? Rogers has found that emetin hydrochloride can be injected safely intravenously in considerable doses. In one severe case of amebic dysentery he gave first  $\frac{1}{2}$  grain of the drug dissolved in 5 c.c. of normal saline, injected very slowly into the median basilic vein, without the slightest depressing effect on the pulse, while the same evening he gave  $\frac{2}{3}$  of a grain, and a day later a one-grain dose in the same way. His favorable results justify him in advising the intravenous method in such acute attacks of amebic disease.

---

**Gastric Ulcer:** In the August number of the *Medical Council*, J. N. Jerome states that the treatment of gastric ulcer is principally dietetic and hygienic. Post mortem examination show that a large number of ulcers heal completely, but the process is slow and tedious, often requiring months, and in severe cases years. The important points in treatment are: (1) Absolute rest in bed. (2) A carefully and systematically regulated diet. Theoretically, it is better to give the stomach an entire rest, but practically this cannot usually be done. The food should be bland, easily digested, and given at stated intervals. Leube's ulcer diet is at present time highly esteemed. (3) Medicinal measures are of little value. Bismuth and nitrate of silver may be given, but they influence the associated conditions rather than the ulcer. The Carlsbad salts are recommended. Pain, if severe, requires opium. Osler says that for the vomiting there is no measure so successful as lavage, though some authorities decry the use of the tube on account of the danger of perforation. If hemorrhage occurs the patient should be quickly brought under the influence of morphine. Ice may be applied to epigastrium, and gelatin or horse serum given hypodermically. There are many cases in which a cure is not possible, although they may have received the most careful dietetic, hygienic and medicinal treatment. In any case, the sooner this fact becomes known, the better in order that an operation may be performed before any of the complications may have set in. It has been shown by a large clinical experience that with efficient drainage of the stomach, by way of a properly executed gastroenterostomy, better conditions may be established for the patient than by any other method of treatment. The results will vary, not only with the skill of the operator, but also as regards permanency, and with the care with which these patients avoid hygienic and dietetic abuses after recovering from the operation.

---

**Open-air Treatment.** In the January number of the *American Journal of the Medical Sciences*, Rowland G. Freeman writes upon the open-air treatment of pneumonia and anemia in children. The importance of fresh air in the treatment of certain diseases is now well established. The best results from fresh-air treatment are obtained when the air is cold, when it is freely moving in an open space, and when the individual is kept in it twenty-four hours a day. Open windows give a freshness to the air of a room that is never attained by scientific forced ventilation. Too much access of air for comfort is best avoided by cheese-cloth screens. Pneumonia of infancy is a disease of housing. It has little tendency to develop in summer and is rarely found in winter in children that are kept in the open air. Ten years ago a good deal was



written concerning this out-door treatment of hospital cases, particularly by Doctor Northrup, and while the results obtained continued satisfactory, this method of treatment has gradually fallen into disuse. Moreover, the application of this treatment has usually not been very thorough. A child would be kept outdoors a certain number of hours each day, but rarely have they been kept outdoors all the time. The one disease that is most generally accepted as benefited by fresh-air treatment is pneumonia. The method of treating these cases at Roosevelt Hospital has been to give them an initial dose of castor oil, put them in beds on the roof. Keep their extremities warm and their bowels open. Very few of the cases have received any stimulant or expectorant. In some cases when the cough was troublesome a dilute solution of tincture of chloride of iron in glycerin or water was used. The mortality in 25 cases of lobar pneumonia was 12 per cent; in 62 cases of broncho pneumonia it was 21 per cent. His summary is that: treatment of children in an open air shed in winter increases their vitality and resistance to disease more powerfully than medicines. Pneumonias run a short course, and show a very low mortality. Certain abnormal conditions of the blood will rapidly improve with little or no medical treatment.

---

**Sterilization of Dental Instruments Important.**—The possibility of the transmission of disease through the medium of dental instruments has probably been considered by every occupant of the dentist's chair. It constitutes one of the fears with which a patient is possessed the moment he adjusts himself for his period of treatment. Authoritative instances of the conveyance of contagion in this manner are extremely rare, its frequency not being determinable, although few will deny the possibilities of occurrences of this character.

The list of organisms which may contaminate dental instruments is formidable, but this does not mean that the diseases of which they are the causative factors necessarily ensue if they are accidentally carried into the mouth. Their presence upon dental instruments is, however, an indication of what the surgeons call poor technique. In surgery poor technique is usually attended with disastrous results, but in dentistry errors of this character may produce no ill effects. In spite of this relative freedom from danger, dentists are determined that their methods shall equal the highest standards.

Cleanliness should be the primary consideration in all dental operations. The white coat of the operator represents more than comfort; it is the symbol of neatness. The dentist who works with unclean instruments, who provides soiled linen, or who places a common drinking glass before his patient, should be judged accordingly. Fortunately the members of the profession who do these things are criticized and suffer from loss of patronage, so that there is a strong tendency on the part of dentists to maintain their surroundings above reproach. With the sterilization of instruments some carelessness may manifest itself, partly owing to the fact that many instruments are injured by such processes, are too complicated to be treated in this manner, or that the public is not competent to detect errors of technique. However, the public is rapidly learning the value of aseptic methods and the proper equipment is now found in nearly all dental offices.

Thorough studies of the sterilization process have recently been made for dentists by the United States Public Health Service, at the request of various dental associations throughout the country, and in a recent publication of that service detailed information will be found as to the accepted methods for the sterilization of all dental instruments.—*Health News, U. S. Public Health Service.*

---

## NEW AND NONOFFICIAL REMEDIES

Since publication of New and Nonofficial Remedies, 1915, and in addition to those previously reported, the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion with "New and Nonofficial Remedies":

Euresol pro Capillis.—Eurosol (see New and Nonofficial Remedies, 1915, p. 268) perfumed to render it suitable for scalp lotions. Merck & Co., New York (*Jour. A. M. A.*, Dec. 4, 1915, p. 2009).

Pollen Extract (Pollen Vaccine).—A solution of pollen protein. It is used for the relief or prophylaxis of a common type of hay fever (pollinosis). Before using it the patient's susceptibility and tolerance should be determined. Treatment with pollen extract has seemed to give relief in some cases.

Hay Fever Vaccine, Mulford (Autumnal).—Pollen extract prepared from ragweed. Marketed in packages of four syringes containing, respectively, 0.0025 mg., 0.01 mg. and 0.02 mg. of pollen protein. Also in separate syringes containing 0.02 mg. pollen protein. The H. K. Mulford Co., Philadelphia, Pa. (*Jour. A. M. A.*, Dec. 4, 1915, p. 2009).

Mercuric Succinimide, Merck.—A non-proprietary brand of mercuric succinimide admitted to New and Nonofficial Remedies. Merck & Co., New York (*Jour. A. M. A.*, Dec. 4, 1915, p. 2009).

Morphine Meconate, Merck.—A non-proprietary brand of morphine meconate admitted to New and Nonofficial Remedies. Merck & Co., New York (*Jour. A. M. A.*, Dec. 4, 1915, p. 2009).

Swan's Staphylococcus Bacterin (No. 37).—Marketed in packages of six 1 Cc. vials and in 20 Cc. vials. Swan-Myers Company, Indianapolis, Ind.

Swan's Streptococcus Bacterin (No. 43).—Marketed in packages of six 1 Cc. vials and in 20 Cc. vials. Swan-Myers Company, Indianapolis, Ind.

Calcium Peroxide, Merck.—A non-proprietary brand of calcium peroxide admitted to New and Nonofficial Remedies. Merck & Company, New York.

Sodium Peroxide, Merck.—A non-proprietary brand of sodium peroxide admitted to New and Nonofficial Remedies. Merck & Company, New York.

Zinc Peroxide, Merck.—A non-proprietary brand of zinc peroxide admitted to New and Nonofficial Remedies. Merck & Company, New York.

Ethyl Salicylate, Merck.—A non-proprietary brand of ethyl salicylate admitted to New and Nonofficial Remedies. Merck & Company, New York.

Osmic Acid, Merck.—A non-proprietary brand of osmium tetroxide admitted to New and Nonofficial Remedies. Merck & Company, New York.

Sodium Oleate, Merck.—A non-proprietary brand of sodium oleate admitted to New and Nonofficial Remedies. Merck & Company, New York.

Thiosinamine, Merck.—A non-proprietary brand of thiosinamine admitted to New and Nonofficial Remedies. Merck & Co., New York.

Urea, Merck.—A non-proprietary brand of urea admitted to New and Nonofficial Remedies. Merck & Company, New York.

Ampules Sodium Cacodylate, Mulford,  $7\frac{3}{4}$  grains.—Each ampule contains sodium cacodylate 0.5 Gm. H. K. Mulford Company, Philadelphia, Pa.



Ampules Sodium Cacodylate, Mulford, 15 grains.—Each ampule contains sodium cacodylate 1 Gm. H. K. Mulford Company, Philadelphia, Pa.

Ampules Solution Pituitary Extract, Mulford, 0.5 Cc.—Each ampule contains solution pituitary extract 0.5 Cc. H. K. Mulford Company, Philadelphia, Pa. (*Jour. A. M. A.*, Dec. 11, 1915, p. 2085).

Scarlatina Strepto-Serobacterin, Mulford (Therapeutic) (Sensitized Scarlatinal Streptococcic Vaccine).—Marketed in packages of four syringes. H. K. Mulford Co., Philadelphia, Pa. (*Jour. A. M. A.*, Dec. 18, 1915, p. 2167).

Quinine Dihydrochloride (Quininae Dihydrochloridum).—The dihydrochloride of the alkaloid quinine. Since quinine dihydrochloride is very soluble, its use has been proposed where concentrated solutions of quinine are wanted, as for subcutaneous injections and similar purposes.

Ampules Quinine Dihydrochloride, Mulford, 0.24 Gm.—Each ampule contains 0.24 Gm. quinine dihydrochloride in 1 Cc. of sterile solution. H. K. Mulford Co., Philadelphia, Pa.

Ampules Quinine Dihydrochloride, Mulford, 0.5 Gm.—Each ampule contains 0.5 Gm. quinine dihydrochloride in 1 Cc. of sterile solution. H. K. Mulford Co., Philadelphia, Pa. (*Jour. A. M. A.*, Dec. 18, 1915, p. 2167).

Purified Tricresol, Mulford.—A mixture of isomeric cresols, corresponding closely to Cresol, U. S. P. H. K. Mulford Co., Philadelphia, Pa. (*Jour. A. M. A.*, Dec. 18, 1915, p. 2167).

Iodosticks (Iodine 60 per cent and Potassium Iodide 40 per cent).—Wooden sticks  $1\frac{1}{2}$  inches long, tipped with a mixture of iodine 60 per cent and potassium iodide 40 per cent. Antiseptic Supply Co., New York (*Jour. A. M. A.*, Dec. 18, 1915, p. 2167).

Iodoapplicators and Iodoapplicators, Special (Iodine 60 per cent and Potassium Iodide 40 per cent).—Wooden sticks  $6\frac{1}{2}$  and 12 inches long, respectively, tipped with a mixture of iodine 60 per cent and potassium iodide 40 per cent. Antiseptic Supply Co., New York (*Jour. A. M. A.*, Dec. 18, 1915, p. 2167).

G. Strophanthin (Thoms), Merck.—A non-proprietary brand of ouabain, crystallized. Merck & Company, New York.

Mercury Biniodide Oil Solution in Ampules, H. W. & Co.—One c.c. of solution contains red mercuric iodide in a neutral fatty oil, 0.1 Gm. ( $\frac{1}{6}$  grain). Hynson, Westcott & Co., Baltimore, Md.

Mercuriol Tablets,  $\frac{1}{4}$  gr.—Each tablet contains mercuriol 0.016 Gm. Parke, Davis & Co., Detroit, Mich.

Mercuriol Tablets,  $\frac{1}{2}$  gr.—Each tablet contains mercuriol 0.03 Gm. Parke, Davis & Co., Detroit, Mich.

Mercuriol Tablets, 1 gr.—Each tablet contains mercuriol 0.065 Gm. Parke, Davis & Co., Detroit, Mich.

Mercuriol Tablets, 2 grs.—Each tablet contains mercuriol 0.13 Gm. Parke, Davis & Co., Detroit, Mich.

Mercuriol with Potassium Iodide Tablets.—Each tablet contains mercuriol  $\frac{1}{4}$  gr. and potassium iodide 1 gr. Parke, Davis & Co., Detroit, Mich.

Iodalbin and Mercuriol Tablets.—Each tablet contains iodalbin 5 grs. and mercuriol 1 gr. Parke, Davis & Co., Detroit, Mich.

Liquid Petrolatum, Merck.—A non-proprietary brand of liquid petrolatum, U. S. P. It is made from American petroleum. It is colorless, non-fluorescent, practically odorless and tasteless. Merck & Co., New York (*Jour. A. M. A.*, Dec. 25, 1915, p. 2239).

During December the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

## Heilkraft Medical Co.:

Dimazon, Dimazon Oil, Dimazon Ointment, Dimazon Powder.

## Hoffmann-LaRoche Chemical Works:

Betain Hydrochloride, Roche.

Beta-Naphthol Benzoate, Roche.

Ergotine Citrate, Roche.

Homatropine Hydrochlorine, Roche.

Seiden Peptone, Roche.

Theobromine and Sodium Acetate, Roche.

## Hynson, Westcott &amp; Co.:

Mercury Binioidide Oil Solution in Ampules, H. W. &amp; Co.

## Knoll &amp; Co.:

Ichthalbin Tablets, 5 grs.

Triferrin Tablets, 5 grs.

## Merck &amp; Co.:

Antithyroidin Moebius Tablets,  $\frac{3}{4}$  gr.

Apiol, Merck.

Berberine Hydrochloride, Merck.

Creosote Carbonate, Merck.

Dionin Tablets, Hypodermic, 1 gr.

Dionin Tablets,  $\frac{1}{4}$  gr.

Ergotin, Merck.

Euquinine Tablets, 2 grs.

Euquinine Tablets, 5 grs.

Ferratin Tablets,  $4\frac{1}{2}$  grs.

Iodipin Tablets, 3 min.

Iron Lactate, Merck.

Liquid Petrolatum, Merck.

Ouabain, Merck.

Phenolphthalein, Merck.

Phloridzin, Merck.

Quinine Tennate, Merck.

Sodium Phosphate, Monobasic, Merck.

Sodium Nucleinate, Merck.

Stypticin Tablets, Hypodermic,  $\frac{3}{4}$  gr.Stypticin Tablets, Dental,  $\frac{3}{4}$  gr.Stypticin Tablets, Sugar-Coated,  $\frac{3}{4}$  gr.

Sulphanilic Acid, Merck.

Theophyllin Sodium Acetate Tablets, .15 Gm.

Triphenin Tablets, 5 grs.

Tropacocaine Hydrochloride Tubes, Sterilized, 1 gr.

Veronal Sodium Tablets, 5 grs.

## H. K. Mulford Co.:

Diphtheria Toxin for Immunity Test (Shick Test), Mulford.

## Parke, Davis &amp; Co.:

Iodalbin and Mercuriol Tablets.

Mercuriol Tablets,  $\frac{1}{4}$  gr.Mercuriol Tablets,  $\frac{1}{2}$  gr.

Mercuriol Tablets, 1 gr.

Mercuriol Tablets, 2 grs.

Mercuriol with Potassium Iodide Tablets.

## Powers-Weightman-Rosengarten Co.:

Calcium Phenolsulphonate, P. W. R.

## Swan-Myers Co.:

Swan's Typhoid Bacillus Vaccine (No. 44) (Hospital Package).

Swan's Typhoid Bacillus Vaccine (No. 44) (Board of Health Package).

## Lehn &amp; Fink:

The Council has recognized Lehn &amp; Fink as selling agent for Chloralamid, Schering.



## MEDICAL NEWS

**"Rest Cottage" for Nutritional and Hygienic Treatments.**—The management of the Cincinnati Sanitarium have added to their Hospital for Mental and Nervous Diseases a Rest Cottage. The location and surroundings are ideal and the general plan is that of a comfortable home, and this idea is featured in the detail of the furnishings and in the diet and service. Modern appliances of a curative nature in Hydrotherapy, Electro-therapy and Mechano-therapy are installed, and competent directors will carry out the physicians' instructions. All objectionable features of the culinary department have been obviated by placing this necessary adjunct on the top floor, where there are no patients' rooms. The diet and service conform to individual requirements and are under the direction of the physicians. The tastes of patients will be considered to the fullest possible extent. The physicians and management have put years of experience in hospital training into the construction and equipment of this small health resort, and offer to the medical profession a suitable place for the treatment of functional nervous disorders due to malnutrition and faulty metabolism. The Medical Staff at College Hill, Cincinnati, are F. W. Langdon, M. D.; B. A. Williams, M. D., and Emerson A. North, M. D. The Business Manager of Rest Cottage is H. P. Collins.

---

**Doctor William Thomas Corlett**, of Cleveland, attended by invitation the Annual Meeting and Banquet of the Chicago Dermatological Society, January 18, 1916.

---

**Medical Society Held Meeting at the County Seat—New Officers Chosen.**—The Stark County Medical Society met Tuesday afternoon in the Chamber of Commerce room, Canton. The afternoon's program by the executive board included the following:

Prevailing Diseases and Therapeutics, Dr. O. C. Ricksecker, Wilmot. Surgery, Dr. H. M. Schuffell, Canton.

Obstetrics, Dr. C. A. Portz, Canton.

Diseases of Women and Children, Dr. L. B. Zintsmaster, Massillon.

Hygiene and Sanitation, Dr. J. P. DeWitt, Canton.

Ethics and Legislation, Dr. F. W. Gavin, Canton.

The election of officers took place, the new officers chosen being: President, Dr. G. F. Zinniger, of Canton; secretary-treasurer, Dr. L. A. Buchman, of Canton; corresponding secretary, Dr. F. G. Gavin, of Canton; executive committee, Dr. B. C. Barnard, Alliance, and Dr. J. A. Rheil, Malvern; Medical Defense committeeman, Dr. G. L. Gardner, of Massillon; legislative committeemen, Dr. C. A. Lamont, Canton, Dr. G. L. King, Alliance, retiring president.

---

**Health News—Summary of the Annual Report of the Surgeon-General of the United States Public Health Service.**—The annual report of the Surgeon-General of the United States Public Health Service records the largest amount of work performed in the history of that organization. Since the passage of the law of 1912 the public health functions of the Service have materially broadened, thereby increasing greatly its usefulness to the American people. Throughout the report the economic importance of disease prevention is made apparent to the reader.

Perhaps the most important achievement of the year was the discovery that pellagra is a deprivation disease, resulting from a faulty diet containing an excess of carbo-hydrates. While the final experiments which led to this discovery have only recently been completed, the conclusion itself is the culmination of investigations extending over a period of seven years. The work has consisted of epidemiological field studies, actual feeding experiments conducted at numerous places in Georgia and Mississippi, and experimental research at Spartanburg, South Carolina, and other places.

A new national quarantine station was opened at Galveston, Texas, and the control of the Boston station was transferred to the Public Health Service. A great reduction in immigration has been observed during the year, with a corresponding increase in the number of aliens certified. At the Port of New York the percentage has risen from 2.29, previous to the development of the European conflict, to 5.37 since that time; this increase largely being due to the fact that with decreased immigration more time can be devoted to the examination. The number of cases treated at marine hospitals and relief stations exceeds 55,000, 15,000 of which were hospital patients, a considerable increase over previous years. The coast guard cutter "Androscoggin" was fitted out as a hospital ship and now affords relief to deep sea fishermen on the Banks of Newfoundland.

On the occurrence of plague at New Orleans, the first outbreak upon the Gulf seaboard, the State and local health authorities requested the Public Health Service to take charge of the situation. Extensive rat-proofing and other anti-plague measures were undertaken, resulting in the eradication of the disease from among human beings, and the practical extermination of the rodent infection.

Great reduction in the incidence of malaria was obtained in localities where surveys were conducted. Drainage projects, rice culture studies and the conditions surrounding the impounding of water for power purposes were investigated in order to eradicate as far as possible the disease in these areas. Scientific investigations of malarial infection showed that in the latitude of this country the most important agent in carrying through the winter season is man, and not the infected, hibernating, *Anopheles* mosquitoes, as was previously supposed. From the standpoint of prevention this is a discovery of considerable value.

Studies of occupational diseases and industrial hygiene were instituted at several places during the year. A survey of the industries of Cincinnati was made to determine the cause of the prevalence of Tuberculosis among industrial workers. The investigation relating to the migration of persons suffering from tuberculosis were completed.

Upon the request of the health authorities of five States, the organization and operations of the respective boards of health were studied and recommendations advanced for improvement in the powers and duties of these bodies. The health organizations of several cities were likewise investigated.

Investigations of the pollution of streams and the examination of shellfish were also conducted.

Trachoma was combated in the Appalachian Mountains, where it is most prevalent, over 12,000 cases being treated. Surveys in certain States during the year showed that the disease is not an uncommon infection.

Rural sanitation work was conducted in six different States and everywhere resulted in the reduction of typhoid and other communicable diseases.

Public health laboratories for the prevention of the interstate spread of disease were established in Chicago, Seattle and numerous other railway centers.

Additional duties have been imposed upon the Service by extension of relief benefits to the newly-organized Coast Guard and the physical examination of seamen applying for the rating of "able seamen." For this reason, and because of the greatly increased health functions of the Service, an increase in the commissioned personnel is recommended. An additional building for the Hygienic Laboratory and the establishment of a National Leprosarium for the proper segregation and care of cases of leprosy are also recommended.

---

**Medical Corps of the Navy.**—The next examination for appointment in the Medical Corps of the Navy will be held on or about February 23, 1916, at Washington, D. C.; Boston, Mass.; New York, N. Y.; Phila-



delphia, Pa.; Norfolk, Va.; Charleston, S. C.; Great Lakes (Chicago), Ill.; Mare Island, Cal., and Puget Sound, Wash.

Applicants must be citizens of the United States and must submit satisfactory evidence of preliminary education and medical education.

The first stage of the examination is for appointment as assistant surgeon in the Medical Reserve Corps,\* and embraces the following subjects: (a) anatomy, (b) physiology, (c) materia medica and therapeutics, (d) general medicine, (e) general surgery, (f) obstetrics.

The successful candidate then attends the course of instruction at the Naval Medical School, which will begin on or about October 1, 1916. During this course he receives a salary of \$2,000 per annum with allowances for quarters, heat and light, and at the end of the course, if he successfully passes an examination in the subjects taught in the school, he is commissioned an assistant surgeon in the Navy to fill a vacancy.

Full information with regard to the physical and professional examinations, with instructions how to submit formal application, may be obtained by addressing the Surgeon General of the Navy, Navy Department, Washington, D. C.

**Philippine Civil-Service Examination for Bacteriologist and Pathologist.**—The United States Civil Service Commission announces an open competitive examination for bacteriologist and pathologist for men only. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position, Bureau of Science, Manilla, P. I., at salaries ranging from \$2,000 to \$2,500 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of this position will be to carry on research work in the laboratories of the Bureau of Science, combined with the regular bacteriological and pathological work.

Competitors will not be assembled for examination, but will be rated on the following subjects, which will have the relative weights indicated:

Subjects	Weights
1. Education .....	40
2. Experience .....	40
3. Publications or thesis.....	20
Total .....	100

The degree of M. D. or Ph. D. from a college or university of recognized standing, including at least one year's training in bacteriological laboratory work, is a prerequisite for consideration for this position.

Applicants should have a knowledge and training in immunity and serum therapy.

Under the third subject a thesis may be submitted in lieu of or in addition to publications. If such a thesis is submitted it must present the result of the applicant's own research work in the subject of bacteriology or pathology.

Statements as to education and experience are accepted subject to verification.

Applicants must not have reached their fortieth birthday on the date of examination.

The medical certificate on Form B. I. A. 2 should be executed in accordance with the instructions printed thereon. If it is impracticable for an applicant to appear before a Government physician or a pension-examining surgeon on account of his distance from such physician, the medical certificate may be executed by any reputable physician other than

the family physician of the applicant; but a person submitting such a certificate may be required to undergo another physical examination in case of appointment.

Each applicant must file with his application his unmounted photograph, taken within two years. Tintypes or proofs will not be accepted.

Special attention is invited to the favorable conditions in respect to transportation, leave of absence, clothing, etc., in this service, printed hereon.

This examination is open to all men who are citizens of the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply for Forms B. I. A. 2 and 2118, stating the title of the examination for which the forms are desired, to the United States Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, post office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; customhouse, New York, N. Y., New Orleans, La., Honolulu, Hawaii; old customhouse, St. Louis, Mo.; Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R. Applications should be properly executed and must be filed with the Commission at Washington prior to the hour of closing business on January 18, 1916. The exact title of the examination as given at the head of this announcement should be stated in the application form.

#### **Philippine Civil Service Commission for Assistant Surgeon.—**

The United States Civil Service Commission announces an open examination for assistant surgeon, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bureau of Science, Manila, P. I., at a salary of \$1,800 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The persons appointed as the result of this examination will be assigned to sanitary work in the Philippine Health Service.

Competitors will be assembled for examination, but will be rated on the following subjects, which will have the relative weights indicated:

Subjects	Weights
1. Education .....	40
2. Experience .....	40
3. Publications, or thesis.....	20
Total .....	100

Applicants must have graduated in medicine from a school of recognized standing, and in addition have had special training in bacteriology, either during their medical course or in postgraduate work.

Under Subject 3 a thesis may be submitted in lieu of or in addition to publications.

Statements as to education and experience are accepted subject to verification.

Applicants must have reached their twenty-first but not their fortieth birthday on the date of the examination.

The medical certificate in Form B. I. A. 2 should be executed in accordance with the instructions printed thereon. If it is impracticable for an applicant to appear before a Government physician or a pension-examining surgeon on account of his distance from such a physician, the medical certificate may be executed by any reputable physician other than the family physician of the applicant; but a person submitting such a certificate may be required to undergo another physical examination in case of appointment.



Each applicant must file with his application his unmounted photograph taken within two years. Tintypes or proofs will not be accepted.

Special attention is invited to the favorable conditions in respect to transportation, leave of absence, clothing, etc., in this service, printed hereon.

This examination is open to all men who are citizens of the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply for Form B. I. A. 2 and 2118, stating the title of the examination for which the forms are desired, to the United States Civil Service Commission, Washington, D. C.; the Secretary of the United States Civil Service Board, post office, Boston, Mass., Philadelphia, Pa., Atlanta, Ga., Cincinnati, Ohio, Chicago, Ill., St. Paul, Minn., Seattle, Wash., San Francisco, Cal.; customhouse, New York, N. Y., New Orleans, La., Honolulu, Hawaii; old customhouse, St. Louis, Mo.; Balboa Heights, Canal Zone; or to the Chairman of the Porto Rican Civil Service Commission, San Juan, P. R. Applications should be properly executed and must be filed with the Commission at Washington prior to the hour of closing business on January 18, 1916. The exact title of the examination as given at the head of this announcement should be stated in the application form.

---

**Endowment of \$500,000 to American College of Surgeons.**—The American College of Surgeons begins the new year with an announcement that it has secured from its Fellows an endowment fund of \$500,000. This fund is to be held in perpetuity, the income only to be used to advance the purposes of the college. By this means lasting progress toward the purposes of the college is assured.

The College, which is not a teaching institution, but rather a society or a college in the original sense, now lists about 3,400 Fellows in Canada and in the United States. Without precedent for swiftness of development, it stands today a powerful factor both in the art and in the economics of surgery.

Primarily the College is concerned with the training of surgeons. But the significant fact in connection with the endowment just secured is that it has come from the surgeons themselves, inspired by a motive for better service to the patient. Ideals in the profession of medicine are living things. Probably no more convincing proof of this fact exists than the sacrifice which the surgeons of this continent have made willingly in order to raise this fund.

To begin with, these ideals are to find concrete expression along the following lines of activity:

1. Since the whole problem of the training of specialists for the practice of surgery is the primary purpose of the College, the Regents propose at an early date to present a clear conception of the College to the undergraduate medical students of this continent. The Regents, further, will ask each senior student of this group who has in mind to specialize in general surgery or any branch of surgery to register with the College. As these students, then, serve later as internes and as surgical assistants, they will be requested to report these facts to the College. The College, in turn, will systematically seek information as to the ability and character of such men, and the information thus obtained becomes the basis of admission to Fellowship in the College. In addition to this procedure, the Regents will insist upon the proper keeping of case histories, and they will endeavor to stimulate in these men in training right ideals of medical practice. In this program they ask the active co-operation of the faculties of the medical schools and of all practitioners of medicine.

2. Inasmuch as proper training in surgery is inseparably involved with the conduct and efficiency of hospitals, the College will seek accurate data on all matters which relate to hospitals. From time to time it will

publish studies upon hospital problems, the purpose being always to be helpful to the hospitals. These publications, further, will inform recent medical graduates as to where they may seek adequate general or special training in surgery. To be concrete, the College will deal with such problems as (a) the proper equipment for medical diagnosis, *e. g.*, well-equipped laboratories for chemical, pathological, and X-ray work; (b) the proper forms for case histories and the facilities for keeping these records; (c) the management and the curricula of the nurse-training schools; (d) the specialization essential in any well-organized hospital.

3. The College will ask the faculties of medical schools to consider the advisability of conferring a supplementary degree of efficiency in general surgery and in the various specialties of surgery.

4. The College will issue readable monographs educational in nature, to the press, to the general public, to hospital trustees, and to the profession of medicine upon subjects of medical procedure and the whole meaning of fitness to practice surgery.

The entire impetus of the College springs from within its own membership. Necessarily that impetus implies reform. But there is a vast difference between reform preached at men and reform in the hearts of men which finds expression at their own initiative.

Whatever impetus the College possesses, it originates among the surgeons themselves. It is not an extraneous force or an "uplift" movement. But rather, out of the widely divergent views of many subjects among the Fellows, the aims of the College rise as those time-tried aspirants which are inherently the basis of all that is valuable in the vocation of surgery. The purposes of the College are concerned directly with matters of character and training, with the betterment of hospitals and of the teaching facilities of medical schools, with laws which relate to medical practice and privilege, and with an unselfish protection of the public from incompetent service; in a word, they embody those ideals which have stood the test of centuries. Upon these the Fellows are united. These are the ideals which each Fellow, single-handed, has endeavored to foster, and the expression of them today through the College comes as a sort of mass-consciousness of the whole body of Fellows. The splendid fact is that the Fellows have grasped in an instant the meaning of the College by a process of fusion and they have gladly made sacrifices for its success.

As one comes into wide acquaintance with the Fellows of the College and catches some fair notion of their earnestness, he sees the future of the organization not by means of logic. There is something more subtle and potent than argument. A determined optimism carries a momentum of its own. Without a logical process it seeks concrete expression; and, more than this, it really recreates circumstances through all shifts of weather or play of incident with a certainty not excelled by an utterly rational course. The Fellows of the College, in their widely scattered districts, fuse their consciousness of the organization with a splendid hope in their hearts to advance all that is important and valuable in the profession. This very attitude of mind is the first promise for the future of the College. It is a promise that admits of no defect. It is a pledge of loyalty to medical patriotism which means loyalty to the public welfare exercised through intellectual sincerity and scientific accuracy. It means a safeguard to the public, for it indicates where honest and adequate surgery may be found.

---





INDEX

871

# INDEX

FOR THE YEAR ENDING DECEMBER, 1915

## A

Academy of Medicine, of Cleveland, Reports of Meetings of.....	60, 165, 234, 299, 391, 463, 574, 615, 776
Academy of Medicine of Cleveland, Roster of the Officers and Members of the.....	320
Acknowledgments .....	77, 329, 527, 575, 704, 792
Allen Memorial Meetings, The Dudley Peter....	121
Anti-Narcotic Law in Cleveland, the Harrison, Some Effects of.....	353

## B

### Book Reviews:

Boys and Girls of Garden City, The: Dawson .....	247
Cancer, Its Causes and Treatment: Bulkley .....	701
Chemistry, Physiological: Matthews.....	783
Childbirth, Painless: Tracy and Boyd.....	400
Diabetes Mellitus: Foster .....	525
Diabetes, Starvation Treatment of: Hill.....	791
Ethnology, Medical: Woodruff .....	620
Gynecology, Operative: Cressen .....	702
Habits That Handicap: Town .....	704
Histology, A Textbook of: Krause.....	703
Hygiene, Students' Textbook of: Wilson.....	792
Infants and Children, Diseases of: Chapin and Pisek .....	703
Infections of the Hand: Kanavel.....	246
Infection, Immunity, and Specific Therapy: Kolmer .....	173
Materia Medica and Therapeutics: Parker....	527
Medical Diagnosis, A Textbook of: Anders .....	400
Medical Jurisprudence: Brothers .....	247
Nervous System, Diseases of the: Jelliffe....	789
Nervous Diseases, Textbook of: Dana.....	786
Obstetrics, Principles and Practice of: De Lee .....	787
Orthopedic Surgery: Bradford.....	789
Pathology, A Textbook on: Stengel.....	701
Pathology, A Textbook of: Delafield and Pruden .....	76
Physiological Chemistry .....	788
Practical Medicine Series, The.....	620, 621, 527, 400, 323, 246, 785, 575
Skin, Occupational Affections of the: White .....	575
Small-Pox, The Administrative Control of: Wanklyn .....	327
Surgery of the Blood Vessels: Horsley.....	526
Surgery, Minor and Operative—Including Bandaging: Wharton .....	401
Surgery, War: Delorme .....	791
Syphilis as a Modern Problem: Pusey.....	790
Therapeutics of the Circulation: Brunton....	473
Tonsillitis, The Faucial, Lingual, and Pharyngeal: Barnes .....	327
Visiting List, 1916, The Medical Record: Wm. Wood & Co.....	787
Bone Graft, The Inlay.....	206
Blindness, Prevention of.....	668
Brain in Primitive Man.....	177
Breast Abscesses During Lactation, Early Incision of .....	515

## C

Carcinoma, Branchiogenic, With Report of a Case .....	581
Cardiospasm, The Diagnosis of.....	441
Case Reports from the Medical Department of the Dispensary of Lakeside Hospital 376, 501	
Cerebrospinal Fluid, Cytology of.....	196

Chelidinin, The Effects of, On Smooth Muscles in Intact and Surviving Organs.....	117
Circulatory Disturbances, The Value of Diastolic Blood Measurement in Diagnosis of.....	844
Cleveland City Hospital, Opportunities for Social Service at the.....	640
Cleveland's Contribution to the American Ambulance—A Composite Report of the Work Done by the Lakeside Unit During Its Recent Service at Neuilly.....	421
Clinical Experience with Capsicum, Potassium Bi-Tartrate, and Terebene.....	558
Crippled Children at Rainbow Hospital, Treatment for .....	684
Cyst, Pericardial .....	449
Cytology of Cerebrospinal Fluid.....	196

## D

Digitalis, Remarks on.....	99
District Nursing, The Question of Smaller District Versus Larger District.....	173

## E

### Editorials:

Drug Reform .....	765
Druggist Versus the Drugless Healer, The....	607
Dudley Peter Allen .....	119
Dudley Peter Allen Medical Endowments, The .....	689
Health Improvements Needed in Ohio.....	218
Hunter Holmes Powell.....	51
Intravenous Exploitation .....	603
Mayo Foundation, The .....	547
Medical Inspection in Our Schools, A Resume of the History of the Origin of....	853
Mummy, The Cult of.....	561
Myeloma .....	383
Notifiable Diseases, The Reporting of.....	217
Public Schools and Infant Mortality, The....	291
Public Welfare in Cleveland, Development of .....	692
Trained Nursing Service by the Hour.....	567
Wanted .....	519
Epidemiology of Whooping Cough and Diphtheria in Cleveland in 1914.....	590
Epithelioma of the Pharyngeal Mucosa in a Fowl .....	113
Endocarditis, Rheumatic, Report of a Case Complicated by Multiple Emboli and Thrombosis in which Blood Flow Determinations Were Carried Out, With a Report of the Autopsy Findings .....	492

## F

Feeble-minded, the Insane, and the Epileptic, The Problem of the.....	672
Food Supply, Protection of Cleveland's.....	748

## G

Geological Evidence of Man's Antiquity.....	24
Goitre as It Was Known One Hundred Years Ago .....	31

## H

Harrison Anti-Narcotic Law in Cleveland, The, Some of the Effects of.....	353
Hemangioma of the Pericardium, Cavernous .....	453
Hemolysin, A Natural Anti-Sheep, On the Presence in Guinea Pig's Blood of.....	273
Hemorrhagic Conditions in Infants, Report of Cases of .....	533

Hernias of the Ovary, of the Fallopian Tubes, and of the Ovary and Fallopian Tube. A Contribution to the Study of.....	549
Hernia, Ventral .....	92
Hirschsprung's Disease, With a Report of a Case .....	1
Hospital and the Public Pocket Book, The.....	687

## I

Inlay Bone Graft, The.....	206
Intracranial Bleeding in the New-Born, The Diagnosis of .....	808

## J

Jenner, Edward .....	265
----------------------	-----

## K

Keratitis Parenchymatosa Relative to the Old and New Anti-syphilitic Therapy.....	285
---	-----

## L

Luetin Reaction .....	510
-----------------------	-----

## M

Man in War, Certain Reflections on the Problem of the Wounded.....	599
Medical Library, Recent Publications Added to the .....	709
Medical Inspection of School Children.....	744
Medical News .....	248, 330, 402, 474, 528, 576, 633, 705, 865
Medicines, Safeguarding the Quality of.....	762
Milk Commission for 1914, Report of the Cleveland .....	74
Mouth Infections, The Prevention of Systemic Diseases Arising from and the Purpose and Plan of the Research Institute of the National Dental Association.....	657
McBride Foundation, Announcement of Lectures to be Given Under the.....	157

## N

Nephritis, Acute, The Prognosis and Treatment of .....	81
Neurological Reviews—Case Reported.....	848
Neurosis, The Vagotonic .....	280
New and Nonofficial Remedies.....	59, 164, 231, 293, 390, 462, 525, 573, 613, 699, 773, 862

## O

Ogilvie Method of Treatment of Syphilis of the Central Nervous System with Standardized Salvarsanized Serum—A Preliminary Report of Sixteen Cases.....	407
Ouabain (Strophanthin), Some Conditions Affecting the Toxic Dose of.....	483

## P

Pericardial Cyst .....	449
Precipitation of Serum-Albumin and Glutin by Alkaloidal Reagents.....	211
Prophylaxis in the Care of Infants and Young Children, The Importance of.....	645
Primitive Man, Brain in.....	177
Primitive Man, Skeletal Remains of.....	342
Primitive Man, The Teeth of.....	253
Psychoneurotic Patients, The Treatment of....	11
Public Health Federation, The Ohio.....	276
Pure Milk in the Prevention of Disease, The Role of .....	755

## R

Rheumatic Endocarditis, Report of a Case Complicated by Multiple Emboli and Thrombosis in Which Blood Flow Determinations Were Carried Out, With a Report of the Autopsy Findings .....	492
Removal of an Open Safety-Pin, Point Up, From the Left Bronchus of a Seven-Year-Old Child .....	517
Report to the Academy of Medicine Opposing State Recognition of Optometry.....	170

## S

Safety-Pin, Removal of an Open, Point Up, from Left Bronchus of a Seven-Year-Old Child .....	517
Service Rendered by a Hospital to a Community, The Possibilities of Future Development in .....	651
Social Service at the Cleveland City Hospital, Opportunities for .....	640
Scopolamin Amnesia in Labor.....	43
Scopolamin in Nose and Throat Operations....	288
State Board Examinations.....	78, 530
Syphilis of the Central Nervous System, Treatment of .....	538
Syphilis of the Central Nervous System, The Ogilvie Method of Treatment of—With Standardized Salvarsanized Serum—A Preliminary Report of Sixteen Cases.....	407
Syphilis, Cerebrospinal, The Diagnosis of, by Laboratory Means.....	793
Syphilis, Contagious, City Hospital Care of—Some Social Aspects.....	839

## T

Therapeutics, Department of.....	55, 159, 226, 293, 386, 459, 522, 569, 609, 695, 769, 857
Thymus Gland, The Frequency of Duct-Like Spaces in the, with Remarks on the Formation and Fate of Hassall's Corpuscles.....	186
Transfusion, Jacob Worm Mueller on—A Retrospect .....	546
Tuberculosis in Cleveland, A Histological, Statistical Review of.....	365
Tuberculosis, Incipient Pulmonary, Remarks on the Symptoms and Diagnosis of.....	412
Tumors, Peri-Renal and Peri-Ureteral, A Note on .....	88
Typhoid Fever in Cleveland in 1914.....	821

## U

Urinary Retention, Without Other Symptoms, Report of a Case, Due to Syphilis.....	834
---	-----

## V

Visceroptosis as Part of a Neurologic Syndrome .....	333
Vital Statistics .....	174

## W

Whooping Cough and Diphtheria in 1914, Epidemiology of .....	590
Wounded Man in War, Certain Reflections on the Problem of the.....	599



INDEX OF AUTHORS

A

Alpers, William G..... 99

B

Ball, Florence U..... 748  
Bigelow, O. P.....483, 546  
Biggar, H. F..... 558  
Bishop, R. H..... 631  
Black, Davidson ..... 177  
Bowman, D. O..... 844  
Bowman, Walter M., Toledo, Ohio..... 276  
Bubis, J. L..... 515  
Bunts, F. E..... 92

C

Carey, Mary ..... 365  
Cole, Harold N..... 273  
Cox, T. E..... 821  
Crile, George W..... 421  
Cummer, Clyde L..... 793

D

Dexter, Richard ..... 265  
Douglas, Stephen A., Mount Vernon, Ohio..... 412  
Drysdale, H. H.....352, 672

F

Feil, Harold ..... 510  
Furrer, Arnold F..... 755

G

Gerstenberger, H. J..... 713  
Gill, William C.....

H

Haldy, Walter A..... 757  
Haman, C. A..... 88  
Hanzlik, Paul J.....117, 211  
Harmon, G. E..... 365  
Heineck, Aime Paul..... 549

I

Ingalls, N. William..... 342

K

Keyser, T. S.....834, 848

L

Large, Secord H..... 517  
Leete, Harriet L..... 668  
Lower, William E..... 1

M

Marine, David .....113, 186, 599  
Metzenbaum, Myron ..... 288  
McGee J. B.....55, 159,  
226, 293, 386, 459, 522, 569, 609, 695, 769, 857

O

Osmond, John D..... 441

P

Patton, Arvilla ..... 684  
Perkins, R. G.....590, 921  
Peterson, E. A..... 744  
Phillips, John .....81, 533  
Price, Weston A..... 657

R

Richardson, Maurice L..... 581  
Rowland, V. C.....376, 501

S

Scott, R. W..... 492  
Sherman, H. G..... 170  
Sloan, H. G..... 808  
Smith, Joseph T..... 43  
Sollmann, Torald .....483, 546  
Spitzig, B. L.....31, 280  
Stern, Walter G..... 206  
Stewart, G. N..... 492  
Stoner, Willard C..... 407  
Stotter, James ..... 285  
Street, Elwood ..... 687

T

Timme, A. R.....449, 453  
Timme, Walter, New York City..... 333  
Todd, T. Wingate.....24, 253

W

Warner, A. R..... 651  
Williams, Tom A., Washington, D.C..... 11  
Woolsey, J. F..... 762  
Wright, Howell ..... 640  
Wyckoff, C. W..... 645

**Tropical Sanitation.**—In an address before the Conference of Health Officers of New York at Rochester last September, Surgeon-General W. C. Gorgas, U. S. Army, Washington, D. C. (*Journal A. M. A.*, Dec. 25, 1915), took as his subject tropical sanitation in its relation to general sanitation. He said that the great awakening in tropical sanitation in the last twenty years had its first beginning in the Spanish-American War. It has been known for the past three or four hundred years that the military expeditions involving any large body of white troops could not be undertaken in the tropics on account of the loss from disease, and he gives records of a few of such operations and their losses during the last two centuries. The French army in Santo Domingo in 1798, out of a total strength of 25,000, lost over 22,000 from yellow fever, and four years later out of a total of 40,000 lost 20,000. Where it prevailed it was equally fatal to the civic populations, as shown by United States records and those of Spain. About the beginning of the nineteenth century it looked as if yellow fever was to be spread over the whole known world. It was evident that the epidemics which affected the United States were imported from Havana. When this city fell into our hands in 1898 every effort was made to control the disease. In 1900 it had been made one of the cleanest cities in the world, but yellow fever was worse than it had been for years. In spite of the disbelief of the natives, who, however, were patient under rigid sanitary measures, the work was continued and the experiments which were made demonstrating the cause of yellow fever and therefore revealing the method by which it could be controlled are detailed. The antimosquito work in Havana was commenced in February, 1901, and the disease was eradicated in September of the same year, and has since then practically disappeared in the northern hemisphere. In 1898 also, Sir Ronald Ross, of the British army, had demonstrated that malaria was conveyed from man to man by another species of mosquito, the *anopheles*, and the same conditions existed as to the transfer of malaria as with that of yellow fever. It was evident, therefore, that a very slight extension of the work against yellow fever ought to cover work against malaria, and this has turned out to be the case. Gorgas gives a brief resume of the sanitary work done during the construction of the Panama Canal and shows how near it came to failure in the beginning, before the members of the commission were won over to the views of the sanitarians. In fact, they asked that the sanitary authorities be relieved, stating that their work was not practical or sane. Fortunately, this request was not granted, and the last case of yellow fever occurred in Panama in September, 1905, and only one case has occurred since in the republic. Health conditions otherwise also rapidly improved and soon the isthmus, as to health, compared favorably with many parts of the United States. He lays much of this to the economic measures adopted. It required higher wages to induce men to work under the conditions which had existed and the latter part of his paper will be of interest to social workers and publicists. In all civilized countries at the present time producers get less than their natural wages as a result of competition and social conditions. Surgeon-General Gorgas says he would be glad if he could spend the rest of his life in the fight for the greatest of all sanitary measures, natural wages.

---









N B 688





3 2044 103 056 149